Yves E Pinet

IMPROVED BUDGETING AND PROGRAMMING IN THE UNITED STATES DEPARTMENT OF DEFENSE AND CANADIAN DEVELOPMENTS.

IMPROVED BUDGETING AND PROGRAMING IN THE UNITED STATES DEPARTMENT OF DEFENSE AND CANADIAN DEVELOPMENTS

by

Yves E. Pinet
Bachelor of Commerce, 1957
Saint Mary's University
Halifax, Nova Scotia
Canada

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Thesis directed by
Karl E. Stromsem, Ph. D.
Professor of Public Administration

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PREFACE

On March 26, 1964, the Honorable Paul T. Hellyer, Canada's Minister of National Defence,[1] tabled his "White Paper on Defence" before Parliament and announced his intention to integrate the Armed Forces of Canada under a single Chief of Defence Staff. Concurrent with this announcement, the Minister mentioned a new programing system for the integrated Armed Forces. To achieve this objective, it is intended to group the total Canadian military structure into a number of major military missions for the purpose of establishing an integrated system of planning, programing, and budgeting.

Preliminary studies on a Canadian Defence programing system commenced during the early part of 1963. Although considerable progress has been made to date, the proposed programing system remains in the development stage and has not yet received official sanction.

During my assignment with the United States Navy Graduate Financial Management Program, I became interested in the integrated system of planning, programing, and budgeting implemented by Secretary of Defense Robert S. McNamara. It was during this tour of duty that I first became aware of this programing concept and its potential value as an aid to financial management.

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[1] In Canada, the word equivalent to the American "defense" is spelled "defence." In this paper, whenever reference is made to the Canadian military organization, the word "defence" is used.

It is in the light of these developments that this paper has been prepared. The topic was not selected on the basis of any previous knowledge in this field, but rather because of the lack of it. The paper reviews, in general terms, the United States budget process, the programing system implemented in the United States Department of Defense, and the proposals for implementing a similar system in the Canadian Armed Forces.

Objectives of the Thesis

The primary objective is to examine the United States military budget process with particular emphasis on the development of methods employed for integrating planning, programing, and budgeting. It is hoped that the thesis may be of some value to other students wishing to obtain a broad picture of this important and exciting subject.

A second objective is to transpose the system into a Canadian setting and describe the work that has been accomplished toward laying the foundation for implementing a programing system.

Methodology

The primary information was obtained through library research. The historical background of the United States budgetary process and the development of the military performance budget was compiled from past and current literature in the field.

Acknowledgment

The author is indebted to Mr. David Novick of the RAND Corporation for providing a variety of pertinent literature on the United States programing system.

The author is also grateful to Lieutenant Commander E. V. Marguetts, Royal Canadian Navy, for providing documents, notes, and comments without which the chapter on the proposed Canadian programing system could not have been prepared.

The kind and personal attention received from Lieutenant Commander Paul D. Olson, CEC, USN, is also acknowledged. Without the latter's assistance the author could not have fathomed the deluge of acronyms associated with the vast and complex United States defense organization. His knowledge and assistance in this respect has been invaluable.

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CHAPTER I

HISTORICAL BACKGROUND OF THE BUDGET

What Is Budgeting?

What is budgeting? There are probably as many definitions of the word "budgeting" as there are people interested in or actively engaged in the field of financial management.

Although the word "budget" was originally used to designate the public purse or bag which served as a receptacle for government revenues and expenditures, the term budget has progressively increased in significance with the passing years.

For those in business a budget signifies a plan of operation expressed in monetary terms. An accountant's dictionary defines the word "budget" as:

1. A financial plan serving as an estimate of and control over future operations.

2. Hence, any estimate of future costs.

3. Any systematic plan for the utilization of manpower, material, or other resources.[1]

For those in government the term refers to the President's proposed plan of action submitted to Congress for approval. Burkhead describes

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[1] Eric L. Kohler, A Dictionary for Accountants (2d ed. rev.; Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1957), p. 75.

For those in government the term refers to the President's proposed plan of action submitted to Congress for approval. Burkhead describes government budgeting as a cycle comprising four phases: "(1) executive preparation and submission, (2) legislative authorization, (3) execution, and (4) audit."[1]

From the economist's point of view, "budgeting is essentially an economic problem involving, as it does, the allocation of scarce resources among almost insatiable and competing demands."[2]

The budget process is generally recognized as one of the most powerful and useful management tools available to the President. As expressed in the 1961 Annual Report of the Joint Financial Management Improvement Program:

> The budget process is generally recognized as one of the most important devices for establishing policies and for planning, coordinating, and controlling programs as well as their financing. Through that process the President formulates and presents his program and financial plan for consideration by Congress. After congressional action, the Budget serves as a device for financial control and performance evaluation in program execution. Improvement of the budget process, therefore, is a matter of continuing concern throughout the Government.[3]

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[1] Jesse Burkhead, Government Budgeting (New York: John Wiley & Sons, Inc., 1956), p. 87.

[2] Arthur Smithies, The Budgetary Process in the United States (New York: McGraw-Hill Book Company, Inc., 1955), pp. xiv-xv.

[3] The Joint Financial Management Improvement Program, Annual Report for Fiscal Year 1961, December 12, 1961, p. 3.

The Treasury Act, 1789

The matter of continuing concern for improvement of the budget process can readily be seen in the development of budgeting in the United States Government. The budget process as it exists today is the result of a long and laborious evolution. The first reference to legislative authority and control of government revenues and expenditures is contained in the Constitution of the United States, 1789. Article 1, section 8, subsection 1, states:

> The Congress shall have the power to lay and collect taxes, duties, imposts, and excises to pay the debts and provide for the common defense and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States.[1]

Subsections 2 and 5 authorize the government to borrow money on the credit of the United States and to coin money. While these provide regulations for the purpose of obtaining revenue, Section 9, subsection 7, provides that "no money shall be drawn from the Treasury but in consequence of appropriations made by law; and regular statement and account of the receipts and expenditures of all public money shall be published from time to time."[2]

The Treasury Act of 1789 followed immediately and assigned the accounting responsibilities of the government to the Secretary of the Treasury. The Act provided for a Comptroller, an Auditor, a Register of the Treasury, and Treasurer. During the formative years of the budget process, a power struggle evolved between the executive and legislative branches of

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[1] "Constitution of the United States," Universal Standard Encyclopedia, ed. Joseph Laffan Morse, Vol. VI (1955), p. 1969.

[2] Ibid., p. 1970.

government. Congress emerged as victor in exercising control over executive departments but at the expense of centralized executive authority in budgetary matters. The congressional system which developed between 1801 and 1909 resulted in what Burkhead classifies as "the period of budgetary disorganization in the Federal Government."[1]

Under this system executive departments dealt directly with congressional committees. The President had no direct budgetary responsibilities and Treasury's function merely consisted of transmitting the Departmental Book of Estimates to Congress.

Although reforms were enacted during this period, they were of minor significance. The United States was experiencing an affluent development stage and was exempt from suffering fiduciary growing pains. Present-day economic concepts appeared almost in reverse. Plagued by large surpluses rather than deficits, Government was faced with large revenues and few expenditures.

The Budget and Accounting Act, 1921

After the Civil War the general public had anticipated that government expenditures would return to pre-war levels. When the upward trend was not reversed, interest in government financial management increased immensely. Because of a tremendous expansion in both government and private enterprise, government expenditures continued to increase and rose to such

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[1] Burkhead, op. cit., p. 9.

a level as to arouse interest in the financial activities of the government.

In 1911 President William Howard Taft appointed a Commission on Economy and Efficiency on the Subject of the Need for a National Budget. The object of the Commission was to suggest a method of budgeting whereby the President of the United States, as head of the administration would be made responsible for presenting to Congress a definite business and financial program. The Commission was also directed to produce a budget system that would classify expenditures, appropriations, and estimates in such a manner as to provide meaningful information for Congress as well as for the benefit of interested citizens.

The Commission was in fact charged with the task of establishing some means of improving cooperation between the President and Congress. It was intended that the President should present clearly defined administrative programs to Congress and the general public. Congress, on the other hand, should have the responsibility of providing the President with definite enactment authorizing him to execute his programs.

The above study ultimately resulted in one of the most significant advances in government financial management being enacted as the Budget and Accounting Act of 1921. The most important contribution of the Budget and Accounting Act is that it placed responsibility for the formulation and submission of a National Budget squarely on the shoulders of the President, who, as Head of the Executive Branch, was made fully responsible for the administration of government activities.

The Act, in part, made provision for a National Budget system, established the Bureau of the Budget under the administration of a Director responsible to the President, and created the General Accounting Office under a Comptroller General responsible only to Congress.

The Budget and Accounting Act of 1921 is considered a landmark in the United States budgetary system. For the first time in history the system made provision for executive formulation and presentation of programs, authorization by Congress, execution under control of the President, and an independent audit of executive activities for review by the legislative branch.

Government Reorganization

During the years following the enactment of the Budget and Accounting Act of 1921, the budget system continued to be the subject of criticism and continuous studies. Various amendments were enacted in order to improve the budgetary process and provide the President with a better tool for responsible administrative management.

Generally speaking, further development in the budgetary process provided for increased presidential power in the formulation and execution of the government's financial activities. Authority to apportion funds was transferred to the Bureau of the Budget from the heads of departments. This procedure enabled the President to regulate the rate of expenditures and also gave him authority to create reserves against appropriations in order to provide for contingencies or effect savings through increased efficiency or changes in requirements.

Following enactment of the Reorganization Act of 1939, Executive Order No. 8248 transferred the Bureau of the Budget from the Treasury Department to the newly established Executive Office of the President. This change is considered another landmark as it outlines the functions and duties of the Bureau of the Budget, giving further emphasis to the fact that the Bureau must concern itself with the over-all government financial management. The changes implied an acknowledgment by Congress of the President's direct responsibility for the management of the government's executive branch. "With increased responsibilities, it /the Bureau of the Budget/ emerged as the principal institution staff arm of the Chief Executive."[1]

The Budget and Accounting Procedures Act, 1950

The President's authority and responsibility with regard to the formulation of the National Budget was further fortified with the enactment of the Budget and Accounting Procedures Act of 1950.

This Act incorporated the basic recommendation of the first Hoover Commission. It provided for full disclosure of federal financial operations, improvement of the budget and accounting systems, and an effective audit program to control income and expenditures. This Act is considered by many as the largest step forward since the Act of 1921. The Act also redefined appropriations and specified that the President transmit the budget to Congress during the first fifteen days of each regular session. Responsibility

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[1] U.S., Bureau of the Budget, Executive Office of the President, The Bureau of the Budget: What It Is: What It Does (June, 1964), p. 2.

for the preparation of the departmental estimates was placed on the head of the agencies. The President, however, was given authority to determine and specify the date for submission of departmental requests.

The budget process as it exists today is the result of a lengthy and laborious development. The duties and responsibilities of both the executive and legislative branches of government have been clearly defined. Responsibility for the formulation and preparation of the National Budget has been duly fixed in the Head of the Executive Branch, the President of the United States. The Legislative Branch, deriving its powers from the Constitution, authorizes the President's plans through the legislative and appropriations processes.

Within this political framework, a detailed and exacting budget procedure has been established providing a complete cycle of budget preparation, authorization, execution, and control through audit procedures. The following chapter gives a brief description of the budget cycle and the roles played by the various branches of government.

CHAPTER II

THE BUDGET CYCLE

General

Budgeting is a never-ending job and often appears to be confusing as the phases of one budget overlap the phases of others. For example, between January and June of each year, personnel involved in budgeting are often required to deal with three budgets simultaneously. While executing the budget for the current fiscal year, the budget for the fiscal year commencing in July is being presented and justified before Congress, and the budget for the fiscal year to commence one year from July 1 is being planned and developed. Consequently, it is helpful to single out one budget and follow it through the entire cycle.

The budget cycle can be divided into four distinct phases: preparation, authorization, execution, and audit. Timing is important in budgeting and considerable effort is exerted at all levels to meet the various deadlines which have been established. While the budget cycle is long, consuming some thirty-one months, "it is a period filled with intense activity, short deadlines, and continual discussion, analysis, justification, and revision."[1]

A graphical representation of a typical budget cycle is given in Figure 1, page 10.

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[1] U. S., Department of the Navy, Office of the Comptroller, The Budget Process in the Navy, NAVEXOS - 2254, June 1960, pp. 2-6.

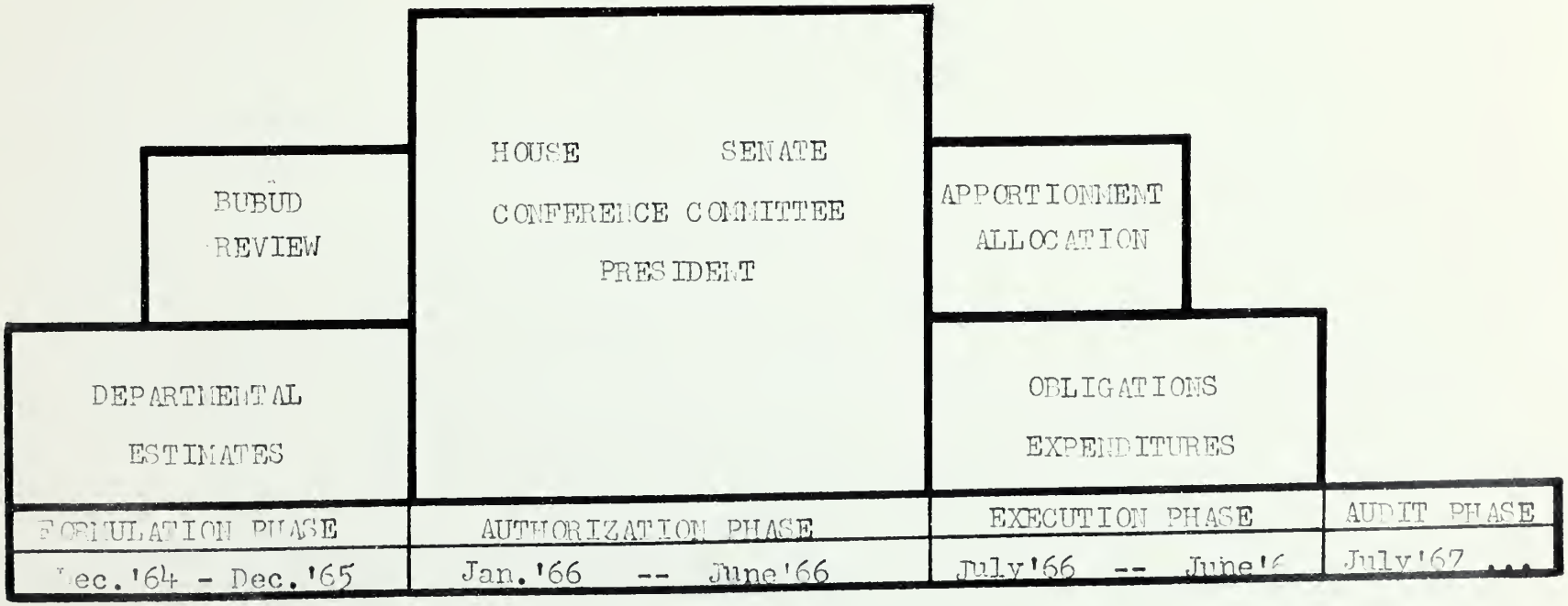

Fig. 1. --The Budget Cycle

Formulation Phase

A typical budget formulation begins with program planning started many months before the beginning of the fiscal year for which the budget is being prepared. During this initial stage, units and bureaus commence planning for the fiscal budget beginning one year from the following July 1. For example, in December 1964 agencies would have begun preparation of the budget for the fiscal year commencing July 1, 1966, and terminating on June 30, 1967.

Very early in this stage the departmental budget offices issue the "budget call" outlining departmental policy decisions and transmitting technical information necessary for the preparation of estimates.

During the month of May, Cabinet officers and heads of independent agencies discuss their probable requirements with the Bureau of the Budget. At this point, the Bureau of the Budget prepares estimates of the total government expenditures in anticipation of meetings with the President for the purpose of developing an over-all program and budget policy. During these presidential meetings, expenditure estimates are discussed in the light of programs, revenue estimates, and general economic trends upon which policy decisions are made.

Following these departmental and presidential discussions, the Bureau of the Budget issues a policy letter to the heads of departments and agencies setting forth, in general terms, the economic assumptions upon which the budget is to be prepared. Presidential decisions affecting the

various areas of government activities are transmitted as well as the budget ceilings for most departments and agencies.

In June the Bureau of the Budget issues the "Calls for Estimates," requesting that budgets be prepared on the basis of approved programs. Such matters as budget format, timing, and the nature of budget justifications are set forth in this letter.

During July and August the departments and agencies, assisted when required by the Bureau of the Budget, prepare their budget and detailed justification. Submission of the budget estimates and justification normally occurs on the first of September.

During the months of September, October, and November, the Bureau of the Budget's examiners conduct hearings on departmental budgets. The recommendations of budget examiners are reviewed by the Director, and provision is made for appeals by departments and agencies. During this last stage, appeals are dealt with by the Director or the President as applicable, and once finalized, the President's budget is prepared and printed.

Authorization Phase

In mid-January, the President's proposed programs and recommendations for the following year are submitted to Congress. Shortly after the President's proposals have been heard, the appropriations committees undertake congressional review of the budget. It is traditional for the House of Representatives to initiate appropriations. The House Committee on

Appropriations is made up of fifty members. The committee chairman forms thirteen subcommittees of from six to fourteen members each. Each subcommittee chairman is responsible for scheduling hearings, analyzing budget requests of one or more designated agencies, and developing proposed bills for presentation to the House by the full committee.

The departments and agencies appear before the subcommittees and present their budgets and justification thereof. After the hearings, the subcommittees determine the appropriations to be recommended and any limitations they wish to attach to the utilization of funds. The subcommittee's report, together with the appropriation bill, are then referred to the House Appropriations Committee. The latter presents the bill to the House of Representatives, which is resolved into the Committee of the Whole. The bills are debated, voted upon by the House, and passed on to the Senate.

In the Senate the budget is again subjected to review. Designated subcommittees deal with specific areas of the budget and procedures are very similar to those followed by the House subcommittees. During both House and Senate hearings, an opportunity is provided for individual departments and agencies to present whatever information they believe might help their justifications and assist the subcommittees in their deliberations.

The proposed bill is prepared by the subcommittee, passed to the full committee, and then forwarded to the Senate. After various amendments have been debated and acted upon, a vote on the entire bill completes action by the Senate.

Usually the bill passed by the Senate will differ from the one passed by the House. Conferees are appointed to the Conference Committee and, once reconciliation is agreed upon, the bill is forwarded to the House, the Senate, then onward to the President for signature, and then becomes law.

Traditionally the Senate is the more lenient of the two legislative bodies. The Senate tends to act as a court of appeal, and Senate hearings are normally directed at the differences between the appropriations as requested and the reductions imposed by the House. Senator Paul Douglas puts it this way:

> Another interesting phase of the congressional appropriations process is the way the Senate seems invariably to increase appropriations over the amounts passed by the House. One of the common jokes around Washington is that an agency will request more than it actually needs, depending on the House to cut its request by 50 per cent, the Senate to restore the amount to 100 per cent, and the conference committee to compromise at 75 per cent, which is the figure actually wanted by the agency in the first place. [1]

Figure 2 illustrates the authorization of the budget by Congress.

Execution Phase

The execution phase begins on the first of July of each year after enactment of appropriations. With few exceptions, appropriations are made directly to the departments and agencies rather than to the President. Within fifteen days after approval, agencies and departments initiate action to obtain release of authorization from the Bureau of the Budget. Requests

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[1] Paul H. Douglas, Economy in the National Government (Chicago: The University of Chicago Press, 1952), p. 58.

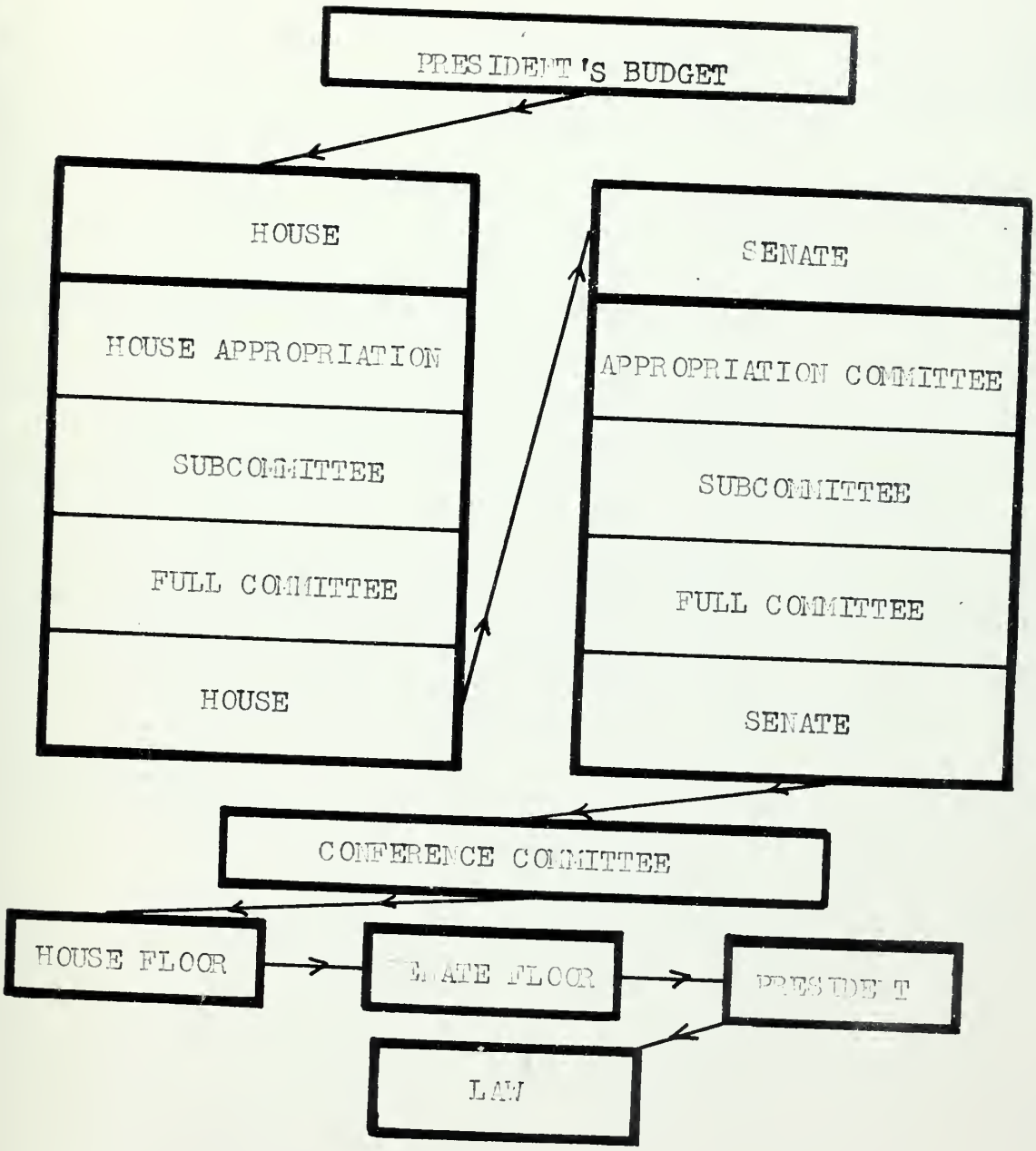

Fig. 2.--Legislative Authorization of the Budget

for apportionment outline the need for the funds and state the amount required.

Agencies and departments render monthly reports to the Treasury and the Bureau of the Budget. These reports list the current status of authorizations, apportionments to date, obligations, and expenditures. These form the basis upon which re-examination of apportionment is carried out by the Bureau of the Budget. The apportionment process gives the President the power to create reserves for emergencies or to effect savings through increased efficiency or changing conditions.

Within agencies and departments, authority is extended downward through the allotment and sub-allotment processes. Administrative control is exercised through the apportionment and allotment processes. Fiscal control, which consists of the maintenance of prescribed accounting records, is exercised and administered by the Treasury Department and the appropriate agency.

Audit Phase

Auditing functions are carried out on a continuous basis by the General Accounting Office. While the Bureau of the Budget acts as the President's staff arm in budgeting matters, the General Accounting Office is responsible directly to Congress and, through audit procedures, ensures that appropriations are expended according to the purpose for which they were enacted.

Although audits are generally conducted to insure the legality of financial transactions, greater emphasis is being placed on financial management practices and their improvement. The Secretary of the Treasury, the Director of the Bureau of the Budget, and the Comptroller of the United States form the Joint Financial Management Improvement Program, a committee designed to strengthen financial management practices in the Federal government in order to improve management needs of both the executive and legislative branches of government.[1]

During recent years many studies and experiments have been donducted with a view to improving budgetary techniques. It is now generally recognized that budgeting provides a very powerful management tool when properly used. The following chapters will describe recent developments in the Department of Defense budgeting system.

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[1] Annual Report of the Joint Financial Management Improvement Program for Fiscal Year 1961, December 12, 1961, p. 3.

CHAPTER III

ATTEMPTS AT PERFORMANCE BUDGETING, 1947-1961

At the end of World War II hostilities, reforms to improve the content and presentation of the Federal budget began to gather momentum in all areas of government activities. Most attempts were directed at improving budgetary techniques in an effort to develop a more meaningful and adequate budgetary mechanism capable of dealing with the ever-increasing and complex functions of government.

Soon after the war, a task group in the Navy Department undertook to streamline the archaic appropriation structure. As a result of these the Navy, in 1946, presented its 1948 budget estimates in two alternate forms. One represented the traditional basis of classifying estimates, while the other represented an attempt to classify estimated requirements in terms of functions or programs, rather than in terms of the goods and services to be purchased.

After overcoming the initial resistance presented by the Bureau of the Budget, both forms were submitted to Congress. However, the Legislative Branch chose to ignore the new proposal of estimating requirements on a program basis.[1]

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[1] Frederick C. Mosher, Program Budgeting: Theory and Practice (New York: American Book-Stratford Press, Inc., 1954), p. 80.

National Security Act, 1947

The problems which followed the passage of the National Security Act of 1947 revived interest in the importance of the military budget.

The National Security Act of 1947 set up a National Military Establishment headed by a Secretary of Defense for the purpose of providing general direction, authority, and control over the three military departments. This Act created a new military layer having limited authority over the Army, Navy, and Air Force. Although the Act recognized the World War II Joint Chiefs of Staff as principal advisors to the President, Secretary of Defense, and the National Security Council,[1] each department retained authority in certain matters to address itself directly to the Bureau of the Budget, the President, and even the Congress.[2]

Mr. James Forrestal, a strong advocate of this system, became the first Secretary of Defense and "worked with this arrangement for two years by which time he was convinced that the views he had espoused just wouldn't work."[3] Shortly after passage of the bill, the first Secretary of Defense became gravely concerned over budgetary matters.

Forrestal's problems during late 1947 and more particularly during 1948 in preparing and presenting an integrated defense budget have had considerable significance in the development of unification as well as in recent budgeting in the Defense Department. The open appeals

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[1]David Novick, Program Budgeting in the Department of Defense (The RAND Corporation, Memorandum RM-4210-RC, September, 1964), p. 1.

[2]Mosher, op. cit., p. 31.

[3]Novick, op. cit., p. 1.

by the Air Force for more than the Defense Department had approved for it; the later requests by the Army for more than had been approved; the passing by Congress of appropriations above Presidential requests for the Air Force and the President's subsequent impounding of funds--all these attest to the significance of the budget and to the weakness of the position of the Secretary of Defense. Forrestal tried, with doubtful success, to work through the Joint Chiefs of Staff. . . . Although the Secretary of Defense could compel the Chiefs of Staff to re-examine their budgetary demands, he had no power to force them to arrive at real agreement within an approved ceiling.[1]

First Hoover Commission

During this period of budgetary frustration the (Hoover) Commission on Organization of the Executive Branch of the Government formed a task group to study the Department of Defense. The reports made by this task group emphasized the need to give the Secretary of Defense greater authority over the Army, Navy, and Air Force, with particular reference to their fund requests and expenditures. Shortly thereafter, the Hoover Commission itself submitted its recommendations.

The Commission advocated that the Secretary of Defense be endowed with greater executive power and that the three service secretaries be designated "Under Secretaries of Defense." It was further recommended that, subject only to the authority of the President, the Secretary of Defense should become the center of administrative authority in all matters including the preparation of the military budget as well as control over expenditures of funds as appropriated by Congress.[2] The 1949 amendments to the National Security Act closely followed the recommendations of the Commission by

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[1] Mosher, op. cit., p. 32. [2] Ibid., p. 33.

asserting the executive authority of the Secretary of Defense over the Army, Navy, and Air Force.

Another significant recommendation was made by the Hoover Commission regarding the budget concepts of the Federal Government. In a report to Congress the Hoover Commission stated: "We recommend that the whole budgetary concept of the Federal Government should be refashioned by the adoption of a budget based upon function, activities, and projects: this we designate as a 'performance budget.'"[1]

Title IV, 1949

As a consequence of this recommendation and the work of a task force under the direction of Mr. Ferdinand Eberstadt, Title IV was approved by Congress and included as a part of the National Security Act amendments.

Title IV was a significant landmark in the financial management of the Department of Defense. It provided for the establishment of a Comptroller for the Department of Defense as a whole, as well as a Comptroller in each of the three military departments. Also of equal significance was a directive by Congress that the Department of Defense prepare a performance-type budget as recommended by the Hoover Commission.

As defined by the Hoover Commission, a performance budget is one which is based on functions, activities, and projects:

> Such an approach would focus attention upon the general character and relative importance of the work to be done or upon the service to

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[1] Budgeting and Accounting, a report to the Congress by the Commission on Organization of the Executive Branch of the Government, February, 1949 (Washington: U. S. Government Printing Office, February, 1949), p. 8.

be rendered, rather than upon the things to be acquired, such as personal services, supplies, equipment, and so on. These latter objects are, after all, only the means to an end. The all-important thing in budgeting is the work or the service to be accomplished, and what that work or service will cost.

Under performance budgeting, attention is centered on the function or activity--on the accomplishment of the purpose--instead of on lists of employees or authorizations of purchases.[1]

A performance-type budget took some time to take a firm hold in the Department of Defense. "The Hoover Commission indicated what should be done, but not how it could be done."[2] Although the word "program" was not used specifically by the Hoover Commission, it is assumed by many that the Commission was in fact referring to a "program budget." Mosher defines performance budgeting as follows:

> The central idea of the performance budget is deceptively simple. It is that the budget process be focused upon programs and functions --that is, accomplishments to be achieved, work to be done. Performance budgeting is essentially synonymous with what has long been referred to as program budgeting.[3]

David Novick, head of the Cost Analysis Department for the RAND Corporation, agrees that the Commission was referring to a programing concept, at least similar to the program concept used by the War Production Board in World War II. He substantiates his point of view as follows:

> My reason for making this statement is the knowledge that a major force behind this concept as developed by the Hoover Commission was

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[1] Ibid.

[2] David Novick, Efficiency and Economy in Government through New Budgeting and Accounting Procedures (The RAND Corporation, Memorandum R-254, February 1, 1954).

[3] Mosher, op. cit., p. 79.

Ferdinand Eberstadt. Eberstadt as Program Vice Chairman of the WPB /War Production Board/ from September 1942 until March 1943 probably did more than any other single person to recognize the need for programing in over-all terms and to foster and encourage the development of the tools which WPB used to do the programing job.

In the WPB Eberstadt was dealing with programs like landing craft, tanks, or bomber aircraft in terms of the steel, aluminum or copper which they cost. [1]

Reclassification of Appropriation Titles

The first obstacle to the implementation of a performance budget was one of classification. Mosher considers that the first and most significant change toward a performance budget was essentially in the form of classification. The Bureau of the Budget took the first step and developed a broad classification of the basic functions as a whole and amended the appropriation structure for the various agencies. As a consequence, a considerable reduction in the number of individual appropriations was effected, and individual agencies proceeded to develop internal classifications and division of activities, programs, functions, and projects. [2]

The original attempt by each service to design its individual appropriation structure resulted in considerable variations among the services. The Navy reduced its appropriations from fifty-two to twenty-one as listed below:

1. Military Personnel, Navy
2. Military Personnel, Naval Reserve

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[1] David Novick, Which Program Do We Mean in "Program Budgeting?" (The RAND Corporation, Memorandum P-530, May 12, 1954).

[2] Mosher, op. cit., p. 83.

3. Military Personnel, Officer Candidates
4. Navy Personnel, General Expenses
5. Military Personnel, Marine Corps
6. Military Personnel, Marine Corps Reserve
7. Marine Corps Troops and Facilities
8. Aircraft and Facilities
9. Construction of Aircraft and Related Procurement
10. Ships and Facilities
11. Shipbuilding and Conversion
12. Ordnance and Facilities
13. Ordnance for Shipbuilding and Conversion
14. Medical Care
15. Civil Engineering
16. Public Works
17. Research
18. Service-wide Supply and Finance
19. Service-wide Operations
20. Operation and Conservation of Naval Petroleum Reserves
21. Naval Petroleum Reserve 4, Alaska.

Although the above classification denoted a significant improvement over that previously used, it represented a rearrangement which was primarily organizational in nature rather than functional. This was further emphasized by the fact that each Bureau was given responsibility and jurisdiction over

one or more appropriation.[1]

The Army, on the other hand, reduced the number of appropriation titles from twenty-one to eight and classified them as follows:

1. Military Personnel, Army
2. Maintenance and Operations, Army
3. Procurement and Production, Army
4. Research and Development, Army
5. Military Construction, Army
6. Army National Guard
7. Reserve Personnel Requirement
8. Military Construction, Army Civilian Components.

Unlike the Navy, the Army appropriation structure was based on a cost category basis in contract with the Navy appropriations based on an organizational basis.[2]

The Air Force attempt to segregate capital from operating costs and group together broad categories or elements of cost was evidenced in the following appropriation titles:

1. Aircraft and Related Procurement
2. Major Procurement other than Aircraft
3. Acquisition and Construction of Real Property
4. Maintenance and Operations

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[1] Ibid., pp. 86-87.

[2] Ibid., pp. 88-89.

5. Research and Development
6. Reserve Personnel Requirement
7. Air National Guard
8. Contingencies.[1]

In order to provide some form of compatibility among the three services, the Department of Defense established in 1950 a classification of Budget Categories. This was an effort by the department to provide a method for summarizing and comparing the total cost of the three services. Budget categories were established as follows:

1. Military Personnel Costs
2. Maintenance and Operation
3. Major Procurement and Production Costs
4. Acquisition and Contruction of Real Property
5. Civilian Components
6. Research and Development
7. Industrial Mobilization
8. Establishment-wide Activities.[2]

Evaluation of Attempts

As a result of these efforts by each of the three services and the Department of Defense as a whole, there was a general assumption that the modifications resulted in a performance budget as recommended by the Hoover

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[1] Ibid., p. 87.

[2] Ibid.

Commission. Mosher does not consider that the Department of Defense had a performance budget as intended by the Hoover Commission. In his evaluation of the above developments, Mosher states:

> Obviously, in any large organization, there is a variety of different ways of defining "functions, activities, and projects," and the problem may soon be reduced to one of semantics and of differing perspectives. A more fruitful approach to the question is to appraise the classification in the degree to which it contributes to the over-all purposes of budgeting. The purposes fall into two basic classes: the improvement of executive and legislative review and decision, and the facilitation of effective internal administration.[1]

Mosher admits that the classifications were a tremendous improvement over the former classifications. However, nowhere in the Department of Defense budget could anyone find answers to such basic questions as how much protection or how much insurance would be provided by the budget, or how much more or less protection would result if an increase or reduction in the budget were made.

The budget classifications of the three services were essentially a grouping of the costs of supporting elements rather than of operating elements. The budget failed to provide information in a form suitable for appraisal in terms of the fundamental purposes of military activity.[2]

In his book Mosher suggests the need for reassessing the role of budgeting and perhaps improving it in order to make it a more meaningful and useful tool for those within the executive departments as well as for Congress. Mosher suggests that:

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[1] Ibid., p. 90.

[2] Ibid., pp. 92-93.

> A primary need is a tailoring of budgetary systems and classification to the requirement of the different purposes they are intended to serve. This means, in effect, two different budget systems: one designed for the development, appraisal and authorization of future policies and programs at top levels; the other, to facilitate internal programing, management, and control. These we shall refer to respectively as the program budget and the administrative budget.[1]

Mosher then proposes a sample program budget classification for the Army as follows:

Combat Operations (if any)

Overseas Noncombat Operations

Active Defense of the United States

Training

Mobilization Reserve

Research and Development

Construction

Services (not directly allocable).[2]

David Novick, however, challenges Mosher's proposed classification.[3] He agrees that Mosher's classification is a further improvement over the classification adopted by the Department of Defense. However, the classification proposed by Mosher still falls short of the purposes of the program budget which he himself visualized--that is, to assist in program development and facilitate programing, management, and control.

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[1] Ibid., p. 237.

[2] Ibid., p. 238.

[3] Novick, Which Program Do We Mean . . ., op. cit., pp. 8-9.

> It /Mosher's classification/ does not define these activities into meaningful or complete units, that is, the armored division equipped with tank model X, Y, or A. It also separates such highly interdependent activities as "the operation and support of active forces in the United States" and training" from the units which in the end consume either the support or the training. In other words, to be effective, the program should be a device for tying together all of the activities which enter into the armored force division as a simple unit of performance.
>
> Perhaps equally important, there must be a clear-cut distinction between those elements of the program which are designed for recurring annual operating expense and those elements which are for the capital or one-time outlay part of the program. Capital expenditures are for the creation of the bases and depots, the initial procurement of the equipment, the investment in the training of men, etc. These are quite different in both magnitude and timing from the recurring expenditures required to maintain the unit at its rated efficiency.[1]

The above discussion briefly describes the numerous attempts made to implement the Hoover Commission's recommendation of a performance budget which would focus attention upon the nature and the relative significance of the task to be performed rather than upon the things to be acquired.

Despite the significant improvements that were inaugurated by the Department of Defense subsequent to the enactment of the National Security Act of 1947, Title IV of the amendments in 1949, and the Budget and Accounting Procedures Act of 1950, implementation of an efficient and effective planning, programing, and budgeting system was not made until the appointment of Mr. Robert S. McNamara as Secretary of Defense and Mr. Charles J. Hitch as Comptroller of the Department of Defense.

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[1] Ibid.

CHAPTER IV

AN INTEGRATED PLANNING/PROGRAMING/BUDGETING SYSTEM

Getting Started

In 1958 President Dwight D. Eisenhower recognized the need to expedite and fortify the unification process of the Department of Defense. The Defense Reorganization Act of 1958, which he advocated, created unified operational commands. This Act gives full recognition to the fact that the operations of each of the services are important not so much as individual actions but as parts of a combined effort. Although this Act set the stage for full integration of military activities, realization of this concept was not effected until the appointment of Robert S. McNamara as Secretary of Defense.[1]

When he became Secretary of Defense in January 1961, McNamara was given two instructions by President John F. Kennedy:

> First, develop the military structure necessary for a solid foundation for our foreign policy, and to do this without regard to arbitrary or predetermined budget ceilings.
>
> Second, having determined that force structure, procure and operate it at the lowest possible cost.[2]

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[1] Novick, Program Budgeting . . ., op. cit., p. 2.

[2] Robert S. McNamara, "U. S. Defense Policy: A Balanced Military Force," Vital Speeches, Vol. XXX, No. 23 (September 15, 1964), p. 711.

Despite the many innovations and reforms implemented in the Department of Defense prior to his arrival, Secretary McNamara soon realized that the existing system did not provide means for integrating military planning with resource requirements. Although as Secretary he was responsible for presenting the over-all Department of Defense budget, he did not in fact possess an integrated budget but rather a combination of three separate departmental budgets prepared by the Army, Navy, and Air Force. Furthermore, the budget as presented did not provide any way of sorting out the major categories of resources and relating them to major military objectives.[1]

In a speech delivered before the Democratic Platform Committee, Secretary of Defense McNamara related his impressions of the Department as he found it upon becoming Secretary of Defense:

> The Defense Department we found in 1961 was one in which each military service made its own independent plans. We found the Army relying on air-lift which the Air Force was unable to provide. We found the Army envisioning a long war, stockpiling supplies for as long as two years; while the Air Force, envisioning a short war, had supplies for only a few days.
>
> . . . . . .
>
> In 1961, we found military strategy to be the stepchild of a predetermined budget. A financial ceiling was placed on national security and funds were allocated not on the basis of military requirements, but according to the dictates of an arbitrary fiscal policy.[2]

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[1] Novick, Program Budgeting . . ., op. cit., p. 3.

[2] McNamara, op. cit., p. 710.

Purpose of the System

Early in 1961 Secretary McNamara was joined by Charles J. Hitch as Assistant Secretary of Defense (Comptroller). Shortly thereafter, the Secretary announced that a major effort would be undertaken to "bridge" the gap between planning and budgeting by means of a programing system.

The first formal step toward establishing an integrated planning/programing/budgeting system was contained in a directive by Mr. Hitch to the military departments. The fundamental objectives of the new system were set forth by Mr. Hitch as follows:

> To integrate the planning and programing and the financial management functions in order to provide better tools for decision making by the Secretary of Defense and his military advisors; and to create a planning and programing/financial management system that is keyed to a continuous program decision making and not just geared to the annual budget cycle. In such a system not only would budget decisions be program decisions, as they inevitably are now, but program decisions would be budget decisions. That is, decisions to embark on programs would be explicitly decisions to provide the resources required to carry them out.[1]

The purpose of the new system is to provide the Secretary of Defense and his advisors with an adequate and effective managerial tool by introducing some rationale into the military decision-making process. The Navy Programing Manual enumerates in detail the major objectives of the new programing system. These are listed as:

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[1] U. S., Department of the Navy, Office of the Comptroller, Program Change Control System in the Department of the Navy, NAVEXOS P-2416 (August, 1962), p. 1-1.

1. Planning oriented around major missions. Program planning is done on the basis of broad military missions which cut across traditional organizational lines, rather than on the basis of unilateral plans and priorities of individual Services.

2. Ability to relate resource "inputs" to military "outputs." The programing system is designed to provide both financial and non-financial estimates of the resource inputs required over time in order to obtain specified time-phased military outputs.

3. Coordination of long-range planning with budgeting. Budgets and funding decisions must be compatible with long-range programing decisions. Budgeting will continue to involve close scrutiny of detailed resource requirements needed during the relatively short-range budgeting period, but any decisions made at this stage should normally be compatible with currently approved programs.

4. Continuous appraisal of programs. The programing system must provide a means for continuous review of program decisions and a mechanism for changing the programs whenever a need for a change is recognized. Budgeting and funding, tied as they are to the annual appropriation cycle, must, of course, continue on an annual basis; but this does not in any way preclude continuous appraisal of long-range programs.

5. Progress reporting. Control of approved programs must be exercised through a system of progress reports which highlight significant deviations from approved plans so that timely action may be taken.

6. Ability to make cost-effectiveness studies. The programing system must provide a routine capability for making cost-effectiveness studies of alternative force structures. The costing techniques used must be accurate enough to provide a basis for comparing programs, yet at the same time responsive enough to allow frequent studies of many alternatives without imposing repeated burdensome workloads on Department of Defense personnel.

7. Integration of Department of Defense information systems. The programing system imposes rather heavy requirements for information on the Services. Other reporting systems having similar requirements should be revised in order to avoid duplication. Through such a process, the programing system can play a major role in the development of an integrated Office of the Secretary of Defense management system.[1]

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[1] Department of the Navy, Office of the Chief of Naval Operations, The Navy Programming Manual: Part I, Programming Overview, OPNAV (September, 1964), p. I-2-2.

Basic Elements of the System

Although the objectives of the planning/programing/budgeting system are many and varied, the structure of the system can be reduced to five major and basic elements: (1) a program structure defined in terms of missions, forces, and weapons systems; (2) an analytical study and comparison of possible alternatives; (3) an approved five-year force structure and financial program updated on a year-round basis to reflect current requirements; (4) year-round decision making on new programs and required changes; and (5) a system of progress reporting to evaluate the validity and administration of the plan.[1]

Mr. G. H. Fisher, also from the RAND Corporation, looks upon program budgeting as a system involving essentially three primary considerations: structural, analytical process, and information systems.

The structural aspects, or format, pertain to the establishment of a set of categories oriented toward end objectives or missions which are meaningful for long-range planning. Emphasis is placed on projections of some five to ten years into the future in contrast to the conventional budget system which stresses functional and object class categories over a short time horizon.

The analytical process pertains to the various studies which are carried out as an integral part of the programing system. The primary purpose

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[1]David Novick, Program Budgeting: Long-Range Planning in the Department of Defense (The RAND Corporation, Memorandum RM-3359-ASDC, November, 1962), p. 3.

of the analytical process is to assist the decision maker by clarifying, in terms of cost and effectiveness, the various alternatives open to him in a particular program area.

The information system is designed to support the first two by providing progress reporting and control as well as information for the analytical process which requires making estimates of benefits and costs of alternative future courses of action.[1]

Laying the Foundation

The Defense programing system reflects Mr. Hitch's extensive studies on the need for such a system in the Department of Defense. In 1948, Mr. Hitch joined the RAND Corporation, a firm of scientific consultants engaged in government research. Mr. Hitch remained an employee of RAND Corporation until he was appointed Assistant Secretary of Defense (Comptroller) in February, 1961. While at RAND Mr. Hitch took active part in a number of Defense studies sponsored by the Air Force. During this period he lectured to selected Air Force audiences on the subject of "Systems Analysis." The content of these lectures was condensed in a RAND Corporation publication.[2] It was also during this period that Mr. Hitch co-authored the book The Economics of Defense in the Nuclear Age.[3]

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[1]G. H. Fisher, The Role of Cost-Utility Analysis in Program Budgeting (The RAND Corporation, Memorandum RM-4279-RC, September 1964), 1.

[2]Charles J. Hitch, An Appreciation of Systems Analysis (The RAND Corporation, Memorandum P-699, August 18, 1955).

[3]Charles J. Hitch and Roland N. McKean, The Economics of Defense in the Nuclear Age (Cambridge: Harvard University Press, 1960).

Upon taking office as Assistant Secretary of Defense, Mr. Hitch recognized the need for improvement in programing systems. He visualized the introduction of a program/budgeting system as a long and laborious task, consuming a period of several years. This time span, however, was abbreviated considerably by Secretary of Defense McNamara, who set the formulation of the defense budget for the Fiscal Year 1963 as an initial objective.

> In March of 1961, Secretary McNamara indicated to the Military Departments that the FY 1963 budget would be developed as the outgrowth of a 3-phase operation as follows:
>
> 1. Review of military requirements
> 2. Formulation and review of programs to implement military requirements, extending several years into the future.
> 3. Development of the annual budget estimates. [1]

Up to this time military planning and financial management had been treated as independent activities. The planning function had been performed by the Joint Chiefs of Staff and the various planning organizations of each military department. Budgeting on the other hand was the domain of the Comptroller. Planning was done in terms of military services, forces and major weapons systems and projected over a period of several years. Budgeting on the other was done in terms of budgeting classification and projected for only one year. [2] In order to bridge this "gap" between planning and budgeting, the Secretary established a Programming Office under Mr. Hitch, The Assistant Secretary of Defense (Comptroller). See Figure 3, page 37.

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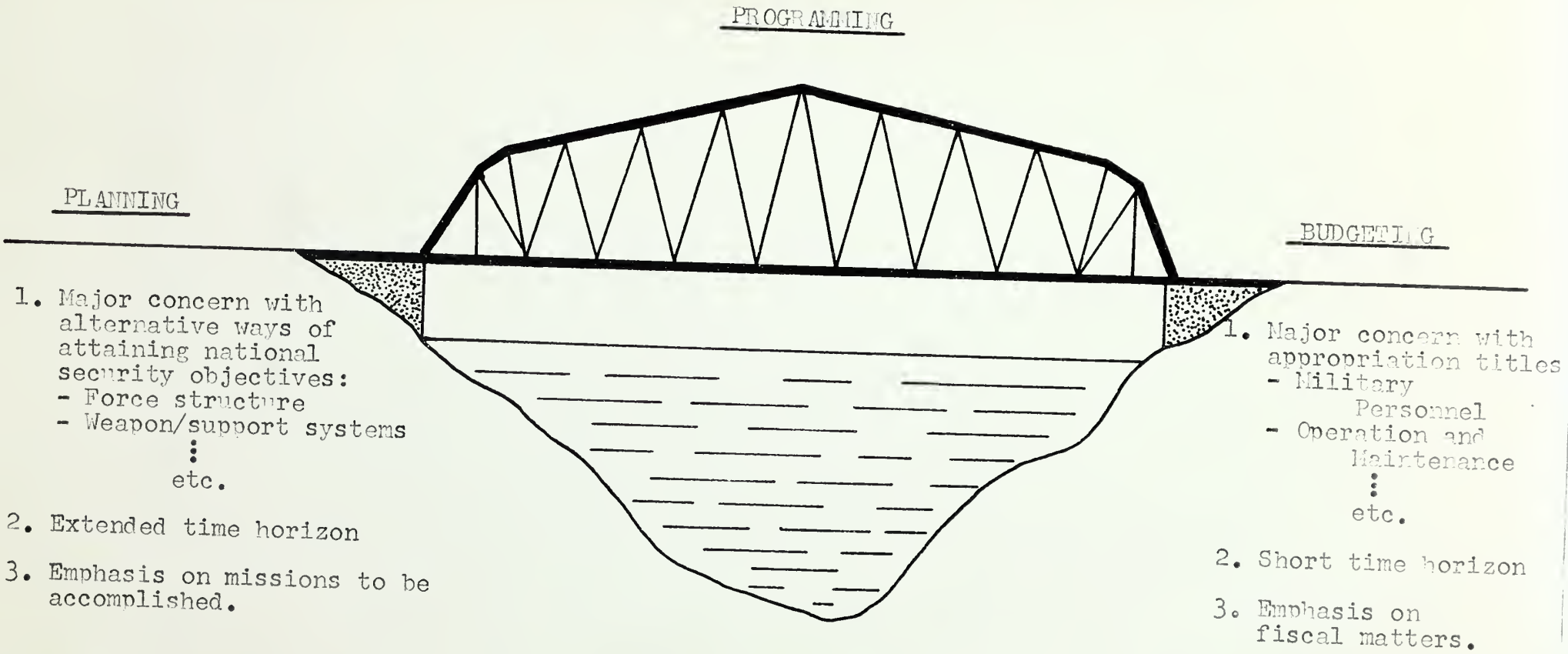
[1] Department of the Navy, Program Change Control System . . ., op. cit., p. 2-1.

[2] Robert J. Massey, "Program Packages and the Program Budget in the Department of Defense," Public Administration Review, March, 1963, p. 31.



SOURCE: Adapted from Program Change Control System . . . , page 2-1.

Fig. 3.--Bridging the gap between planning and programing

This office was given the following duties and responsibilities:

1. To assemble, consolidate, and present the physical programs of the services and all other agencies of the Department of Defense.

2. To translate these physical programs into financial summaries and present them in several ways; i. e., by time period; by initial investment and annual operating costs; by new obligational authority, obligations, and expenditures; by mission or task; by weapon system; and by appropriation category.

3. To provide in the same manner the total financial implications of new or alternative programs.[1]

The Programming Office as originally established by the Secretary was headed by a Deputy Assistant Secretary of Defense (Programming), a position held by Mr. Hugh McCullough. The office consists of two directorates. The Directorate for Systems Analysis, under the leadership of Dr. Alain C. Enthoven, is responsible for the critical examination and analysis of alternative future weapon systems and forces as well as their modes of employment and deployment. The Directorate for System Planning is responsible for obtaining, integrating, analyzing, and presenting pertinent financial and non-financial data and information for decision making at the Office of the Secretary of Defense level.[2]

The review and requirement phase commenced in March, 1961. During this phase some one hundred study projects were initiated, dealing with military requirements problems in critical and difficult areas of national

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[1]Department of the Navy, Program Change Control System . . ., op. cit., p. 2-2.

[2]G. H. Fisher, The New OASD (Comptroller) Programming/Budgeting Process (A Lecture for the AFSC Cost Analysis Course) (The RAND Corporation, Memorandum RM-3048-PR, March, 1962), p. 4.

security, such as:

1. The need for and emphasis to be placed on:

   Strategic bombers and missiles
   Amphibious forces
   Sealift and airlift
   Antisubmarine warfare
   Domestic and foreign military bases and installations

2. The quality of conventional war forces and how to improve them

3. The development of a new tactical fighter aircraft

4. Description of a ten-year shipbuilding program.[1]

Most of these studies were conducted at the Office of the Secretary of Defense level, with necessary inputs being provided by the three military departments.

The formulation and review of programs commenced in May, 1961. This phase comprised three major components: (1) the military departmental submissions of program proposals for the fiscal years 1963-1967; (2) a critical examination of the range of alternative programs by the Secretary of Defense and his military advisors and staffs; and (3) the issuance of guidelines to the military departments. These guidelines were to be expressed in program terms and were to serve as the basis for the preparation of departmental budgets for the Fiscal Year 1963.

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[1] Department of the Navy, Program Change Control System . . . , op. cit., p. 2-2.

The directive issued to the military departments by the Secretary of Defense set forth the task to be accomplished as follows:

> During the requirements and programing phases, the Secretary of Defense, with his military advisors and his staff, will examine a range of alternative programs and make decisions that will form the basis for guidance to the services on the preparation of the Fiscal Year 1963 budget. During the programing phase, attention will be focused on choice from among alternative programs to achieve the national security objectives outlined in the basic national security policy paper. For this purpose, cost and effectiveness comparisons will be made, for the most part using statistical cost estimates and factors rather than the more detailed information supporting the final budget submission.[1]

As a result of these submissions and the ensuing analysis, the entire defense effort was organized into nine military programs, henceforth to serve as the only authorized basis for the preparation of annual budgets. The original list of "program packages" was published as follows:

1. Central War Offensive Forces
2. Central War Defense Forces
3. General Purpose Forces
4. Sealift and Airlift
5. Reserve and National Guard Forces
6. Research and Development
7. Service-wide Support
8. Classified Projects
9. Other Department of Defense projects.

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[1]Department of the Navy, Program Change Control System, op. cit., p. 2-3.

Each of the above packages was further divided into segments referred to as elements. As an illustration, the elements contained in package number one would embrace:

1. Aircraft Forces (B-52, B-58, B-47, RB-47, KC-97, and B-70)

2. Missile Forces, Land-based (Atlas, Titan, Minuteman, Thor, and Jupiter)

3. Missiles, Sea-based (FBM system, Regulus)

4. Command, Control and Communication (465L)

5. Headquarters and Command Support.[1]

The programs listed above formed the basis for the preparation of the budget estimates for the Fiscal Year 1963. The main objective of the system as established is to bridge the gap between planning and budgeting. This is achieved through the integration of the planning, programing, and financial functions in such a way that budget decisions become program decisions, and program decisions become budget decisions.[2] This is a significant improvement over the conventional methods of planning and budgeting previously used by the Department of Defense. In the words of Roswell Gilpatric, former Deputy Secretary of Defense:

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[1] G. H. Fisher, The New OASD . . . , op. cit., pp. 10-11.

[2] G. H. Fisher, Some Comments on Program Budgeting in the Department of Defense (The RAND Corporation, Memorandum P-2721, March, 1963), p. 4.

> In the past, the Defense Department has often developed its force structure by starting with a budget and sending it off in search of a program. Our new system of program packaging has reversed this procedure, by first determining our over-all strategy, then fitting the hardware and the manpower to those objectives. Instead of looking at separate budgets for the three military departments, we now look at specific missions--such as our strategic nuclear force, our air defense force, or our airlift and sealift--as individual program packages whose total content cuts across traditional service lines.[1]

A summary of the Navy Department 1963 Fiscal Year budget plan in terms of program packages and appropriation titles is shown in Figure 4, page 43.

The Program Structure

Programs and Program Elements

> Programming involves the planning and control of resource inputs to achieve a desired military output. It is concerned with the cost, feasibility, and effectiveness of alternative methods of meeting military requirements in order to get the greatest benefit out of any given resource expenditure. Since programing involves both military outputs and resource inputs, a structure must be available for defining each of them in consistent terms.[2]

The integration of planning, programing, and budgeting is achieved through the designation of major "program" and "program elements." Program elements are the basic building blocks of the programing system. They are considered entities upon which vital decisions are made determining the over-all military strength. These units form the basis for planning and

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[1] G. H. Fisher, The New OASD . . . , op. cit., p. 5.

[2] Department of the Navy . . . , The Navy Programming Manual, op. cit., p. I-3-2.

(Millions of Dollars)

	Program								Total
	I	II	III	IV	V	VI	VII	IX	
Military Personnel, Navy	44	57	1,469	27	72	47	1,063	10	2,790
Military Personnel, Marine Corps	--	--	417	--	21	--	230	4	671
Reserve Personnel, Navy	--	--	--	--	77	--	7	--	84
Reserve Personnel, Marine Corps	--	--	--	--	28	--	--	--	28
Operation and Maintenance, Navy	126	54	1,378	1	83	24	1,174	1	2,840
Operation and Maintenance, Marine Corps	--	--	76	--	5	--	110	--	191
Procurement of Aircraft and Missiles, Navy	422	5	2,577	--	25	63	68	--	3,360
Shipbuilding and Conversion, Navy	889	--	2,015	20	--	--	58	--	2,982
Procurement, Marine Corps	--	--	227	--	17	--	15	--	259
Other Procurement, Navy	145	13	577	--	12	16	188	1	953
Research, Development, Test, and Evaluation, Navy	380	4	88	--	--	997	6	--	1,474
Military Construction, Navy	25	1	75	--	--	23	101	--	225
Military Construction, Navy Reserve	--	--	--	--	7	--	--	--	7
Total:	2,029	135	8,898	48	347	1,170	3,019	16	15,863*

* - Total includes classified projects. Note: Because of rounding, figures may not add to totals.

Source: Department of the Navy, Program Change Control System in the Department of the Navy (NAVEXOS P-2416, August, 1962), p. 2-13.

Fig. 4. --Department of the Navy summary of budget plan--by program and appropriation, FY 1963

programing of forces, dollar costs, and manpower. A program element is defined as follows:

> The program element is the smallest unit of military output controlled at the Department of Defense level. An integrated combination of men, equipment and facilities which together constitute an identifiable military capability or support activity. The "Fleet Ballistic Missile System," "Attack Carriers, FORRESTAL Class," and "Recruit Training, Navy" are examples of program elements. All program elements taken together constitute the complete Defense Establishment. To put it another way, every DOD activity falls within one of the program elements.[1]

Major programs are directed at specifically designated military missions. They are made up of interrelated groups of program elements which are considered together either because they support each other or because they are designated as close substitutes for each other.

Cost Categories

As an additional aid to decision making, the cost of each program element is broken down into three categories, each of which has its own particular significance in the decision-making process. The three categories are: (1) Research and Development; (2) Initial Investment; and (3) Annual Operating Costs.

Research and development represents all costs associated with the development of a new weapon or capability to the point where it is ready for operational use. Since the cost of development taken by itself may run into very large sums, a commitment to develop a new weapon system is often a

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[1] Ibid.

major management decision. This cost category includes the cost of developing the actual equipment as well as related costs involved in facilities, supply, and personnel costs.

The investment category represents the costs beyond the development phase. These are the one-time or initial outlays required to bring a new system or capability into operational use. These costs include the original outlay for the equipment as well as the costs necessary for the initial stocks of spares and supplies. If a piece of new equipment requires additional training of personnel, the cost incurred for initial training is also added to investment costs. These costs are most significant to the decision maker as they often involve outlays of over one billion dollars.

The operating costs are the annual recurring costs required to man, operate, and maintain the capability. It is possible that the cost of maintaining a system over its expected life is more significant than the original investment costs. Operating costs must therefore be considered in the initial management decision to select and produce one weapon system as compared with another.[1]

> In defense decision making, costs are examined over a spectrum of time. It is the total cost of the program which is truly significant, not merely the increment which relates to the current yearly budget. Whenever a decision is reached on a program it carries an implicit commitment into the future. The full implications should be studied before the commitment is made.[2]

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[1]Department of the Navy, Program Change Control System . . . , op. cit., pp. 2-6 and 2-7.

[2]Hugh McCullough, "New Concepts in Defense Planning, Programming and Budgeting," The Federal Accountant, Vol. 12, No. 1 (September 1962), 75.

The principle behind the cost category and time phasing is illustrated in Figure 5, page 47.

Resource Categories

Although primary emphasis in decision making is placed on program elements, situations do arise when decisions must be made regarding specific resource inputs below the program element level. In order to provide for decisions of this sort, all inputs are classified into one of four resource categories: equipment; military construction; manpower; and functions and activities related to operation and maintenance. The sum of all categories equals the total resource requirements for the Department of Defense.

Resource categories are listed in either of two annexes of the Five Year Force Structure and Financial Plan. The Material Annex lists the more important procurement items in two parts. The first is a "shopping list" of items exceeding two million dollars in any one year. The second is the weapons dictionary which provides descriptive information of the requirements. The Construction Annex lists the approved construction projects for the current year plus the following five years.[1]

Five Year Force Structure and Financial Plan

On completion of the budgeting phase for the Fiscal Year 1963, the military departments were instructed to up-date program packages and

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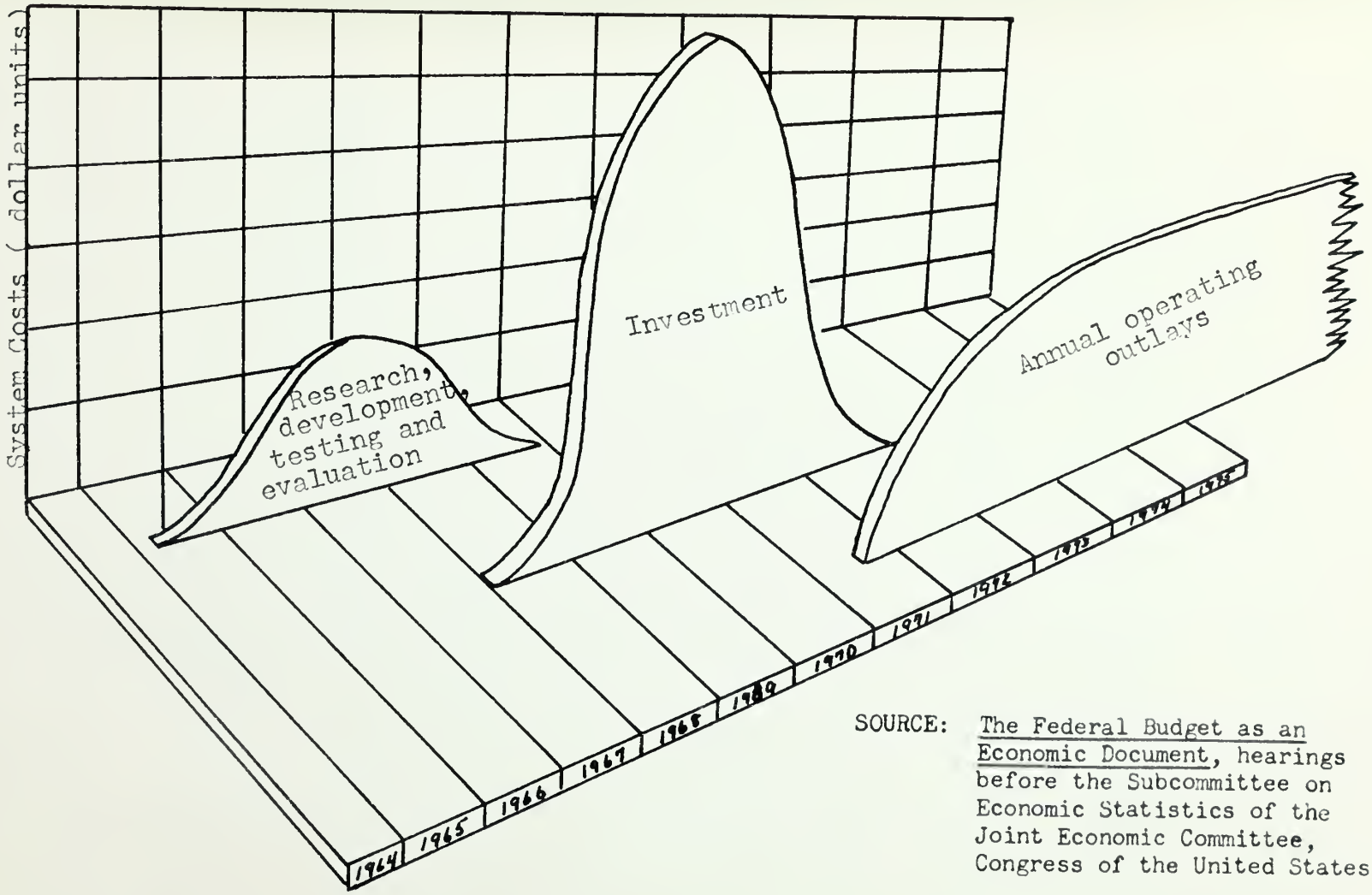
[1]Department of the Navy, The Navy Programming Manual . . . , op. cit., pp. I-3-3 to I-3-4.



SOURCE: The Federal Budget as an Economic Document, hearings before the Subcommittee on Economic Statistics of the Joint Economic Committee, Congress of the United States.

Fig. 5. --Program element cost projection

elements to reflect changes imposed during the budget review and legislative process. At that time the departments were also required to come up with suggestions for specific improvements. As a result of these studies, the word "packages" was dropped from the term "Program Packages," and the program nomenclature was revised as well as the list of elements making up the programs.

The major programs and a general description of each appear in Figure 6, page 49.

Program elements contained in the Strategic Retaliatory Force, program 1, are listed in Figure 7, page 50.

On completion of these studies, the Secretary of Defense in April, 1962, issued his "Five Year Force Structure and Financial Program." This document was essentially a planning tool, a map showing where the Department of Defense hoped to move over the next five years. It established the approved force structure and financial levels for a period of five years from Fiscal Year 1963 to 1967, inclusive. In his letter to the military departments Mr. McNamara stated that "unless a program was contained in the book it had no official approval."[1]

The Program Element Summary Data sheets, Figure 8, page 51, together with all the supporting information such as the description of the forces, their task and missions, procurement lists, facilities lists, etc.,

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[1]Department of the Navy, Program Change Control System . . ., op. cit., p. 3-1.

Program I	Strategic Retaliatory Forces - the forces which are designed to carry out the long-range strategic mission and to carry the main burden of battle in general. They include the long-range bombers, the air-to-ground and decoy missiles, and the refueling tankers; the land-based and submarine-based strategic missiles; and the systems for their command and control.
II	Continental Air and Missile Defense Forces - those weapon systems, warning and communications networks, and ancillary equipment required to detect, identify, track, and destroy unfriendly forces approaching the North American continent.
III	General Purpose Forces - the forces relied upon to perform the entire range of combat operations short of general nuclear war. These include most of the Army's combat and combat support units, virtually all Navy units, all Marine Corps units, and the tactical units of the Air Force.
IV	Airlift and Sealift Forces - those airlift and sealift forces required to move troops and cargo promptly to wherever they might be needed. Included in the airlift forces are both the MATS transports and the Air Force Tactical Air Command troop carrier aircraft. The sealift forces include the troop ships, cargo ships, and tankers operated by the Military Sea Transport Service and the "Forward Floating Bases."
V	Reserve and National Guard Forces - equipment, training, and administration of the Reserve and National Guard personnel of the several services.
VI	Research and Development - all research and development effort not directly identified with elements of other programs--i. e., where there has been no decision to produce for inventory.
VII	General Support - support activities of the several services and the agencies which serve the entire Department of Defense. It constitutes an "all other" or residual category of activities or programs and includes all costs not capable of being directly or meaningfully allocated to the other major programs.
VIII	Civil Defense - Federal assistance for fall-out shelters, warning and radiological monitoring systems, training and education for emergency preparedness, etc.

Source: David Novick, Program Budgeting in the Department of Defense (The RAND Corporation, Memorandum RM-4210-RC, Sept. 1964), 13-14.

Fig. 6.--Major programs in the Department of Defense program budget structure.

Aircraft Forces

B/EB-47

RB-47

B-52

AGM-28A/B

GAM-87

B-58

KC-97

KC-135

RC-135

Missile Forces, Land-Based

Atlas

Titan

Minuteman

Missile Forces, Sea-Based

Polaris System

Regulus System

Command Control, Communications and Support

SAC Control System (465L)

PACCS (KC-135/B-47

UHF Emergency Rocket Communications System (ERCS)

Base Operating Support

Advanced Flying and Missile Training

Headquarters and Command Support

Source: David Novick, Program Budgeting in the Department of Defense (The RAND Corporation, Memorandum RM-4210-RC, Sept. 1964), p. 15.

Fig. 7.--Program elements contained in Program I - Strategic Retaliatory Forces.

Figure 8

PROGRAM ELEMENT SUMMARY DATA	IMPLEMENTING DOD COMPONENT DEPARTMENT OF THE NAVY	PROGRAM CHANGE NO.
PROGRAM ELEMENT		CODE

APPROVED PROGRAM - BY FISCAL YEAR									
FORCES	CFY65	FY66	FY67	FY68	FY69	FY70	FY71	FY72	FY73

TOTAL OBLIGATIONAL AUTHORITY (In Millions of Dollars)									
RESEARCH & DEVELOPMENT RDT & E Military Construction									
TOTAL RESEARCH & DEV.									
INVESTMENT PAMN SCN OPN PMC Military Construction									
TOTAL INVESTMENT									
OPERATING O&M, N O&M, MC PAMN SCN OPN PMC Military Personnel									
TOTAL OPERATING									
TOTAL OBLIGATIONAL AUTH.									
MANPOWER (In Thousands)									
MILITARY Officer Navy Enlisted Navy Officer Marine Enlisted Marine CIVILIAN Direct Hire Contract Foreign Nat'l									

NET CHANGE SINCE LAST SUBMISSION OF _____ (date)										
FORCES										
TOTAL OBLIGATIONAL AUTH.										
MANPOWER	Military									
	Civilian									

BASIS FOR CHANGES	
Date	IMPLEMENTING DOD COMPONENT (Signature) Secretary of the Navy

collectively constitute the Five Year Force Structure and Financial Program.

The Five Year Force Structure and Financial Plan is basically a summary of all approved programs for the Department of Defense. An approved force structure projected eight years into the future and financial levels for a five-year period are established for each of the services. The Five Year Force Structure and Financial Plan for the Department of the Navy is published in nine booklets.

> The first booklet contains the forwarding memorandum and the foreword. The second consists of tables summarizing the Navy data in all DOD programs. The last seven booklets contain Navy program elements or summary data and descriptive data sheets, arranged by code number, and broken down into the seven DOD major programs.[1]

It should be noted that the Five Year Force Structure and Financial Program is a device used internally by the Department of Defense and does not receive official sanction by the United States Congress.

The System and How It Works in the United States Navy

Program Change Control System

Having laid the foundation of the programing system, there remained to be established some method of making the system viable enough to adapt itself to the ever-changing times. The accelerating pace of scientific advancement through research and development confronts the decision maker

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[1]Department of the Navy, The Navy Programming Manual . . ., op. cit., p. I-4-13.

with an ever-widening range of marvelously effective, complex, and expensive weapon systems.

The system ties all aspects of the defence effort together. National Security objectives are related to strategy, strategy is related to forces, forces to resources, and, finally, resources to costs. These are related in such a fashion that a change in any one will require a change in all of the others. The system must therefore be capable of interrelating the three phases, planning, programming, and budgeting, as well as the other managerial functions of decision making, progress reporting, control, and evaluation.

To accomplish this task the Secretary of Defense established a Program Change Control System. The Five Year Force Structure and Financial Plan can be looked upon as the heart of the entire system. As the heart in the human body does, it must be capable of adapting itself to the requirements of its internal organs as well as to the environment external to the system.

The Program Change Control System provides a mechanism for maintaining an up-to-date approved Five Year Force Structure and Financial Plan. The basic function of the procedure is to control and review the submission of Program Change Proposals by sponsors of the Department of Defense.

Advantages of the Program Change Control System are that it:

1. Provides an up-to-date approved Five Year Force Structure and Financial Plan.

2. Provides a method for additions, deletions, or modification of the Five Year Force Structure and Financial Plan.

3. Provides for year-round decision making without regard to the budget cycle.

4. Provides one channel for major decision making. (Up to the Secretary of Defense if above authorized "threshold.")

5. Provides a rapid and effective review for all proposed changes.

6. Provides for decision making on the basis of the best information available, making use of cost-effectiveness studies and analysis of long-range cost implications.

7. Provides for upward and downward communication. Proposals flow upward and decisions flow downward as reflected in the Five Year Force Structure and Financial Plan.

8. Provides for the assignment of responsibility for carrying out decisions.

9. Provides progress reporting and evaluation.

Planning and Programing

In order to visualize the system in motion, the remainder of this chapter describes the entire cycle: planning, programing, and budgeting. The first two phases--planning and programing--are conducted on a year-round basis, while the last phase--budgeting--is a once-a-year operation coinciding with the Federal budget cycle.

Military planning is the first phase of the decision-making process. The Joint Chiefs of Staff and the planners within the military departments coordinate the planning phase.

Planning and programing are really two aspects of the same process and differ only in emphasis. Planning involves the selection of proper courses of action after careful and systematic review of possible alternatives available. In planning, the objectives and the means of achieving objectives are under continual review.[1] Plans must be modified continually as new assumptions supersede the old, new intelligence information is received, or new systems become available. "The preferred alternative remains preferred only so long as no additional knowledge of program prospects in relation to other competitive systems dictates another choice."[2] Selection of the preferred feasible program is made only after careful analysis of projected costs and effectiveness.

Programing, on the other hand, moves closer to actuality and concentrates on translating selected objectives into reality. Programing involves the specific determination of the required manpower, material, facilities, and their respective costs.[3]

It is during these two phases that use is made of cost/effectiveness studies. The planner and decision maker are not only interested in the

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[1]Novick, Program Budgeting in the Department of Defense, op. cit., pp. 12-26.

[2]Ibid., p. 26.

[3]Ibid., pp. 12-26.

military effectiveness of a system, but they are concerned also about its cost of development, initial investment, and operating costs. It is with the aid of cost/effectiveness analysis that the decision maker can effect "trade-offs" and obtain a balanced force structure.

Cost/effectiveness analysis provides an analytical method whereby weapons of the future are placed in a simulated operational context and compared with alternative proposals and existing systems. The primary objective of this analysis is to systematically examine alternative courses of action in terms of effectiveness and costs. Not only does it entail the identification of alternatives open to the decision maker, but it also requires a clarification of their respective implications. Cost/effectiveness analysis is not intended to provide automatic decision making, but rather "to sharpen the intuition and judgment of the decision maker."[1]

> There is a continuing requirement for strategic and naval warfare systems studies in support of the Navy programming effort. Experience has confirmed the value of operations research, systems analyses, and analytically developed forecasts of political, technological, and military trends which might influence the direction of Navy planning. An orderly program of study and research facilitates the identification of selected alternative actions, establishes an improved basis for the development of plans, policies and naval force requirements, and provides a more meaningful rationale for detailed planning and policy level decisions.[2]

As previously mentioned, the Five Year Force Structure and Financial Plan serves as the only official approval of programs--"if a program is

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[1] Fisher, The Role of Cost . . . , op. cit., p. v.

[2] Department of the Navy, The Navy Programming Manual . . . , op. cit., p. I-4-5.

not contained in the book, it has no official approval." Changes in appraisal of the enemy threat, revisions of military policy, technological breakthrough, to name a few, will necessitate changes in plans which in turn will require changes to the Five Year Force Structure and Financial Plan. Proposed changes may originate from the President down through the Secretary of Defense or may be originated by the Military Departments, as applicable. The Secretaries of each of the Military Departments have been delegated authority to approve certain changes which do not exceed established "thresholds." These "thresholds" represent a set of criteria which if exceeded require approval by the Office of the Secretary of Defense. Although the Deputy Secretary of Defense has authority to approve program changes, the majority of Program Change Proposals receive Mr. McNamara's personal attention.

A Program Change Proposal is initiated by a Program Sponsor whenever a requirement exists for a new element to be added, or a major adjustment or modification to an element is indicated, or a program element varies significantly from the schedules and costs initially projected for it.

Program Change Proposals are processed within the Department of the Navy in accordance with established administrative procedures. All Program Change Proposals are submitted over the signature of the Secretary of the Navy. Program Change Proposals dealing with Research and Development are processed on DD Form 1355-1 (see Figure 9, pages 58, 59, and 60). Program changes involving Forces, Investment and Operations are processed

Figure 9

PROGRAM CHANGE - RESEARCH AND DEVELOPMENT	SUBMITTING OOO COMPONENT	CHANGE NUMBER
PROGRAM ELEMENT		DATE LAST PREVIOUS SUBMISSION
PRESENT AND/OR PROPOSED USERS	RESPONSIBLE ORGANIZATIONS	
ULTIMATE PROGRAM OBJECTIVES		
DESCRIPTION		

DD FORM 1 APR 62 1355-1 (Page 1)

Figure 9--Continued

PROGRAM CHANGE - RESEARCH AND DEVELOPMENT *(Continued)*			
RESEARCH AND DEVELOPMENT MILESTONES	COMPLETION DATES		
	ORIGINAL	LATEST APPROVED	PROPOSED
COST SUMMARY *(TOA in $ millions)*	ORIGINAL	LATEST APPROVED	PROPOSED
RESEARCH AND DEVELOPMENT COSTS:			
FY _____ AND PRIOR			
FY _____ *(Current Year)*			
FY _____ *(Budget Year)*			
TO COMPLETE			
TOTALS			
INVESTMENT COSTS:			
FY _____ *(Current Year)*			
FY _____ *(Budget Year)*			
TO COMPLETE			
TOTALS			
LEVEL-OFF ANNUAL OPERATING COST *(By* _____ *)*			
FORCE LEVEL/ITEM ACQUISITION OBJECTIVES			
EXPLAIN CHANGES IN PHASING OR COSTS			

DD FORM 1 APR 62 1355-1 (Page 2)

Figure 9--Continued

PROGRAM CHANGE - RESEARCH AND DEVELOPMENT *(Continued)*			
RESEARCH AND DEVELOPMENT MILESTONES	COMPLETION DATES		
	ORIGINAL	LATEST APPROVED	PROPOSED
COST SUMMARY *(TOA in $ millions)*	ORIGINAL	LATEST APPROVED	PROPOSED
RESEARCH AND DEVELOPMENT COSTS:			
FY _____ AND PRIOR			
FY _____ *(Current Year)*			
FY _____ *(Budget Year)*			
TO COMPLETE			
TOTALS			
INVESTMENT COSTS:			
FY _____ *(Current Year)*			
FY _____ *(Budget Year)*			
TO COMPLETE			
TOTALS			
LEVEL-OFF ANNUAL OPERATING COST *(By* _____ *)*			
FORCE LEVEL/ITEM ACQUISITION OBJECTIVES			
EXPLAIN CHANGES IN PHASING OR COSTS			

DD FORM 1 APR 62 1355-1 (Page 2)

Figure 9--Continued

PROGRAM CHANGE - RESEARCH AND DEVELOPMENT *(Continued)*	
RELATIONSHIP WITH PREVIOUSLY PROPOSED OR CURRENT R&D PROGRAMS	
IMPLICATIONS FOR OTHER PROGRAM ELEMENTS/ITEMS	
APPROVAL SPECIFICALLY REQUESTED FOR	
FINANCING IN CURRENT AND BUDGET FISCAL YEARS	
DATE	SUBMITTING DOD COMPONENT *(Signature)*

DD FORM 1 APR 62 1355-1 (Page 3) Page 3 of 3 pages A-81459

on DD Form 1355-2, as shown in Figure 10 (pages 62, 63, and 64).

An extensive amount of back-up information and data is also submitted in addition to the required forms. The following illustrates the type of additional information required:

1. Force structure and deployment commitments

2. Missions and tasks of the forces/weapon system/program element

3. Description of major systems or equipments and their performance characteristics

4. Description of supporting items, such as armament, ship, and ground support equipment

5. Equipment status of the force/weapon system/program element

6. Status of supporting projects, such as research, evaluation, test, military construction, special training, etc.

7. Maintenance, overhaul, and rework concepts and policies

8. Projected delivery schedules of forces or major weapons systems (ships, aircraft and missiles)

9. Concepts and assumptions used in developing prepositioned deterrent items and general mobilization reserves.[1]

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[1] Department of the Navy, Program Change Control System . . ., op. cit., pp. 4-5 and 4-6.

Figure 10

PROGRAM CHANGE - FORCES, INVESTMENT, OPERATIONS	SUBMITTING OOO COMPONENT	CHANGE NUMBER
DATE LAST PREV SUBM.	PROCURING OOO COMPONENT	
☐ PROGRAM ELEMENT ☐ ITEM	PRESENT AND/OR PROPOSED USERS	

ULTIMATE PROGRAM OBJECTIVES

BASIS FOR CHANGE

RESEARCH AND DEVELOPMENT STATUS

FACILITIES REQUIREMENTS AND AVAILABILITY

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Figure 10--Continued

PROGRAM CHANGE - FORCES, INVESTMENT, OPERATIONS *(Continued)*									
PROCUREMENT AND DELIVERY/COMPLETION SCHEDULE									
FUNDING YEAR - FY	DELIVERY - FY								
									TOTALS
TOTALS									

COST SUMMARY *(TOA in $ millions)*	ORIGINAL	LATEST APPROVED	PROPOSED
RESEARCH AND DEVELOPMENT COSTS:			
FY_____ AND PRIOR			
FY_____ *(Current Year)*			
FY_____ *(Budget Year)*			
TO COMPLETE			
TOTALS			
INVESTMENT COSTS:			
FY_____ AND PRIOR			
FY_____ *(Current Year)*			
FY_____ *(Budget Year)*			
TO COMPLETE			
TOTALS			
ANNUAL OPERATING COSTS:			
FY_____ *(Current Year)*			
FY_____ *(Budget Year)*			
LEVEL-OFF ANNUAL OPERATING COST *(By* _____*)*			
FORCE LEVEL/ITEM ACQUISITION OBJECTIVES			
FIRST LINE LIFE			

EXPLAIN CHANGES IN PHASING OR COSTS

DD FORM 1 APR 62 1355-2 (Page 2)

Figure 10--Continued

PROGRAM CHANGE - FORCES, INVESTMENT, OPERATIONS *(Continued)*	
IF PHASE-OUT, INDICATE TOTAL SAVINGS FROM PREVIOUSLY APPROVED PROGRAM	
IMPLICATIONS FOR OTHER PROGRAM ELEMENTS/ITEMS	
MANPOWER REQUIREMENT AND AVAILABILITY	
APPROVAL SPECIFICALLY REQUESTED FOR	
FINANCING IN CURRENT AND BUDGET FISCAL YEARS	
DATE	SUBMITTING OOD COMPONENT *(Signature)* Secretary of the Navy

DD FORM 1 APR 62 1355-2 (Page 3) B36295 Page 3 of Pages

Financial data are also submitted with Program Change Proposals showing the full cost implications of Research and Development, Investment, and Operating costs (refer to Figure 5, page 47).

Within the Department of the Navy, Program Change Proposals receive wide distribution for the purpose of evaluation by all concerned. The Program Evaluation Center receives, processes, and controls all Program Change Proposals from the time they are conceived and proposed by the program sponsor until the final outcome is known. As an illustration, copies of the Program Change Proposals are provided to: (1) the Comptroller for analysis of financial implications; (2) the Director, Office of Analysis and Review, for assessment of validity and reasonableness; (3) the Chief of Naval Operations and the Commandant of the Marine Corps for an appraisal of the proposal in their respective areas of responsibility; and (4) other offices as appropriate or required.[1]

Although changes may be proposed at any time during the year, the majority of changes occur during the summer months following the annual review of the Joint Strategic Objectives Plan (JSOP), by the Joint Chiefs of Staff. Usually by August the Secretary of Defense has rendered the majority of decisions regarding the changes. If approval is given, changes that were communicated upward as proposals flow downward as commands. Decisions are received by the military department, evaluated, and within ten days the

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[1] Ibid., pp. 4-8.

appropriate department submits a Program Element Summary Data Form acknowledging receipt of the authorized changes as well as updating the Five Year Force Structure and Financial Plan.

In order to up-date the Five Year Force Structure and Financial Plan for changes resulting from other than Program Change Proposals, program elements and Materiel Annex data are submitted to the Office of the Secretary of Defense at the following times and for the following reasons: (1) in December, to record the President's budget decisions; (2) in May, to update and advance the approved Five Year Force Structure and Financial Plan for one additional year; and (3) in August, to reflect whatever changes may be required as a result of appropriations made by Congress.[1]

Budgeting

As indicated earlier, the planning and programing phases are performed on a year-round basis. The budget phase remains a once-a-year effort and follows the traditional Federal budget cycle. When the Secretary of Defense calls for the annual budget, the military departments simply develop the necessary budget requests by converting the appropriate year of the Five Year Force Structure and Financial Plan into the traditional budgetary appropriation titles. This entails taking each of the major program and program elements and converting this information into the traditional appropriation format. Figure 11, page 67, shows the concept of this conversion.

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[1] Ibid., pp. 4-10 to 4-12.

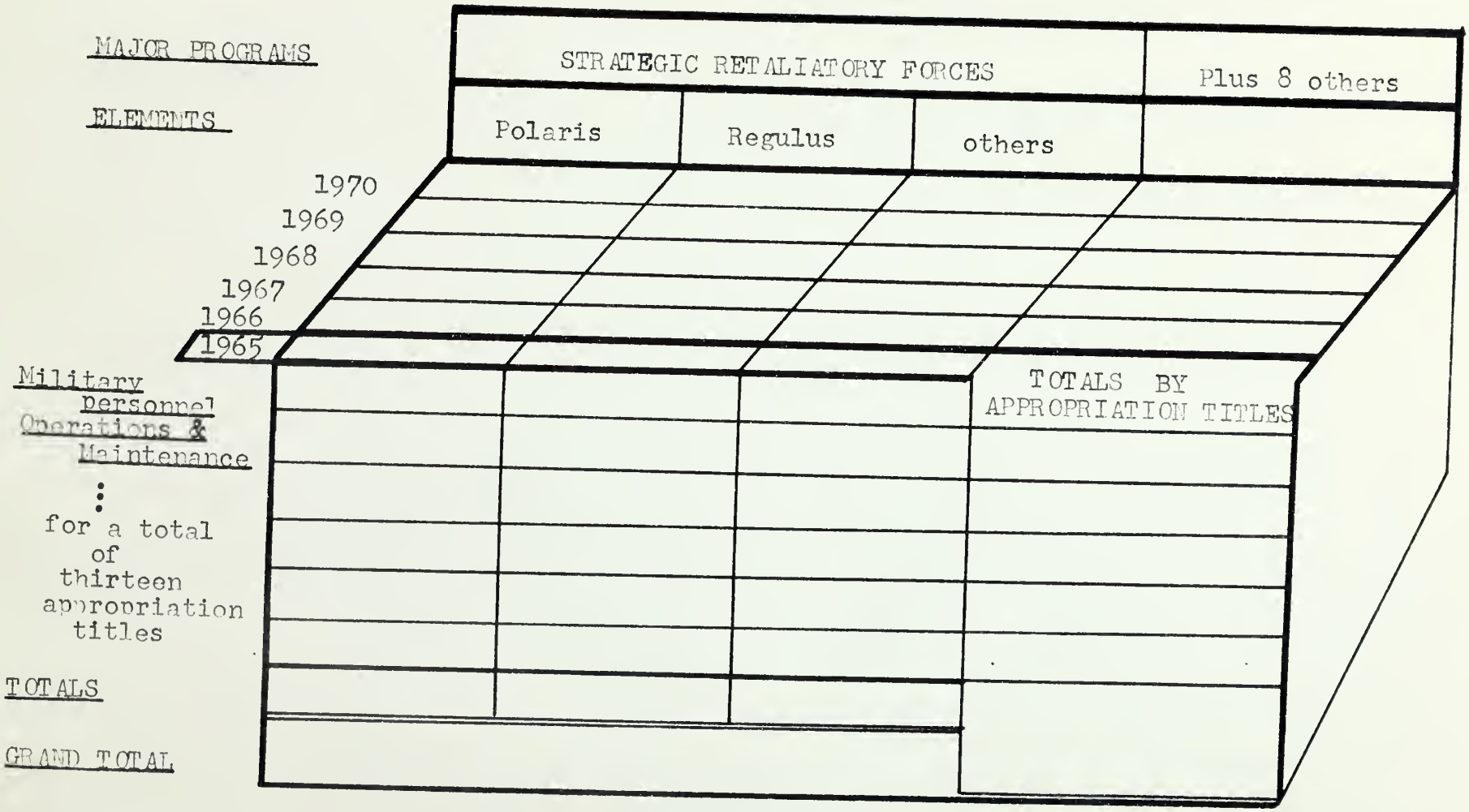

Fig. 11.--Converting programs into traditional appropriation titles

Figure 12, page 69, shows the program and budget schedule for Fiscal Year 1964. The illustration shows a total of five inputs which may result in Program Change Proposals. By mid-June all Program Change Proposals affecting the Fiscal Year 1966 budget are due and submitted to the Secretary of Defense for consideration. During the month of July, the Bureaus prepare the initial Fiscal Year 1966 budget estimates for submission to the Naval Comptroller by the 15th of August.

During the ensuing period the Navy Department's internal budget review is held. After the Secretary of Defense has made his decisions regarding the Program Change Proposals, usually in September or early October, the budget estimates are finalized and submitted to the Bureau of the Budget through established administrative procedures.

Decisions on matters raised by the Joint Office of the Secretary of Defense and the Budget Bureau review are communicated to the military departments by the Secretary. Individual service secretaries may request reconsideration of these decisions if they believe their case may be justified. This leads fo the "Subject/Issue" process, popularly known as "Operation Snowflake.

Although the process just described may seem complicated, it represents an improvement over the methods used prior to 1961. Preparation of budget estimates has been simplified through year-round analysis and decision making.

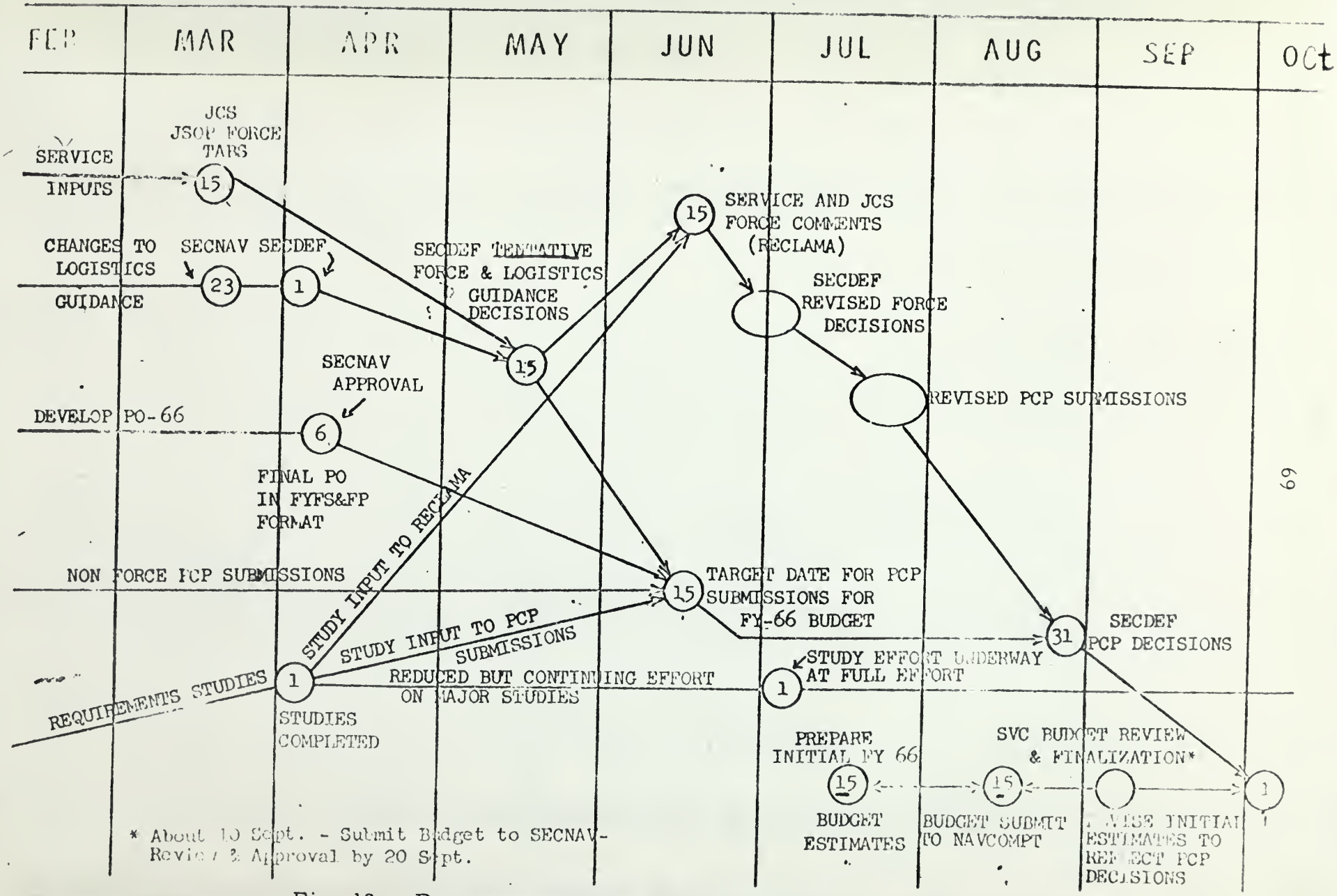

Fig. 12. --Program and Budget Schedule for FY 1964

> Once a set of approved programs, fully costed and with revenue requirements within the limits of anticipated resources, have been developed, the preparation of the annual budget is a relatively orderly and painless process. There should be no need," Mr. Hitch has said, "for a hectic and hurried program review crammed into a few weeks in the midst of the annual budget review." The budget-making phase should consist essentially of converting a one-year slice of approved long-term programs into appropriate budget format and supporting detail.[1]

The correlation between the basic budget and the Five Year Force Structure for the Fiscal Year 1965 is illustrated in Figure 13 on page 71.

Cost Information System

Supplementing the integrated planning/programing/budgeting system are the two significant and related systems dealing with cost information and progress reporting.

To provide effective management planning and control within the framework of the defense planning/programing/budgeting system, the Department of the Navy has developed a cost information system designed to assist the decision maker. The system provides a means of associating dollars with other resources for the units upon which decisions are made. The system was designed by the Navy Department when faced with the need to describe forces and their costing on a different basis than had previously been called for and in a manner compatible with the traditional appropriation structure.[2]

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[1] Robert J. Massey, "Program Packages and the Program Budget in the Department of Defense, Public Administration Review, March 1963, p. 32.

[2] Department of the Navy, Office of the Comptroller, Department of the Navy Cost Information System, Part I (NAVEXOS P-2412, Rev. 1, June 4, 1962), iii to iv.

By Appropriation Title

$ Millions

Item	Program I	II	III	IV	V	VI	VII	Total
Military Personnel, Navy	74	51	1,711	27	83	59	1,096	3,105
Military Personnel, Marine Corps	..	..	503	..	17	..	224	747
Reserve Personnel, Navy	..	..	..	..	99	..	..	99
Reserve Personnel, Marine Corps	..	..	..	..	32	..	..	32
Operation & Maintenance, Navy	257	37	1,557	10	87	27	1,167	3,143
Operation & Maintenance, Marine Corps	..	..	81	..	5	..	101	188
Proc. of Aircraft & Missiles, Navy	403	7	2,175	..	11	18	83	2,698
Shipbuilding & Conversion, Navy	69	..	1,804	8	..	4	24	1,911
Other Procurement, Navy	149	35	715	..	12	8	219	1,140
Procurement, Marine Corps	..	..	139	..	40	..	7	187
Research, Dev., Test & Eval., Navy	65	2	293	..	..	985	12	1,359
Military Construction, Navy	8	3	92	..	..	23	119	247
Military Construction, Navy Reserve	..	..	..	..	7	..	..	7
Total	1,028	138	9,073	46	396	1,128	3,056	14,867

SOURCE: Department of the Navy Budget Digest Fiscal Year 1965, NAVEXOS P-1355, 30 October 1964.

Fig. 13.--Department of the Navy correlation between basic budget - Five Year Force Structure - FY 1965.

The cost information system consists of a library of basic data representing costs, quantities, physical resource characteristics, and a procedure for keeping this information up to date.

The system provides management reports informing on current status as well as useful information for control and decision making. Data provided by the system are useful for: (1) interrelating and updating program and budget data; (2) integrating report of progress against program and budget plans; and (3) integrating material readiness into the information system.[1]

A complete study of the Navy Cost Information system is beyond the scope of this paper. However, its importance to the planning/programing/budgeting system cannot be underestimated.[2]

Progress Reporting

It can be said that planning and control go together. Effective management requires a reporting system capable of keeping management constantly informed of the progress being made toward achieving objectives. This enables management to take corrective action whenever performance

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[1] Department of the Navy, Program Change Control System . . ., op. cit., pp. 5-1 and 5-2.

[2] For a more detailed discussion of the Navy Cost Information system, see:

Department of the Navy, Office of the Comptroller, Department of the Navy Cost Information System: Part I, (NAVEXOS P-2412, Rev. 1, June 4, 1962), and

Department of the Navy Cost Information System: Part II, Structure for Integrating Report of Progress against Program and Budget Plans (NAVEXOS P-2412, July, 1962).

exceeds acceptable deviations from established norms. Corrective action may require more efficient performance or an alteration of the original plans.

In order to determine how closely the military departments are meeting the base program in the Five Year Force Structure and Financial Plan, a progress reporting system has been established for the Department of Defense. Actual performance is reported and compared with the phasing of programs enabling top management, when necessary, to make decisions modifying a program or further implementing its execution.

Significant deviations are detected in sufficient time permitting timely corrective action. Progress reporting involves two basic procedures: (1) physical progress reporting and (2) accounting and reporting of obligations and quantitative data.

In order to facilitate physical progress reporting, milestone schedules have been established for the most important material items. Each month the actual progress for the month and the anticipated progress for the ensuing three months are compared with the established milestone for the period. Any significant deviations from the established milestones are evaluated and the resulting implications enumerated. The reports are prepared by authorized sponsors and forwarded to the Secretary of the Navy through normal administrative channels.

Accounting and reporting of obligations provide the basis for proper planning and time phasing of the Material Annexes, Construction Annex, and the Research and Development projects. The Material Annex Line Item

Report, the Construction Annex Item Report, and the Research, Development, Test and Evaluation Project Reports fall within this category.[1]

The integrated planning/programing/budgeting system, together with its peripheral systems of cost information and progress reporting, represents a significant improvement in military financial management.

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[1]Department of the Navy, Program Change Control System . . . , op. cit., p. 6-3.

CHAPTER V

A PROPOSED CANADIAN PROGRAMING SYSTEM[1]

Introduction

Although preliminary studies for a defence programing system commenced during the early part of 1963, little was known of the Defence Program Working Group's activities. The first official announcement of the proposed system was made public in March 1964 by the Honourable Paul Hellyer, Minister of National Defence. In his "White Paper on Defence," Mr. Hellyer introduced the concept of defence programing as follows:

> It is intended to introduce into the Department of National Defence a management system for planning and controlling major Defence programs at the departmental level. This system will display various components of the long-term Defence program in suitable detail over a significant time period. The system will provide a means of expressing various force structures, weapons systems, logistic arrangements and other military activities in terms of their immediate and long-term costs.

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[1]Material for this chapter was derived to a considerable extent from the personal notes and files of Lieutenant Commander E. V. Marguetts of the Royal Canadian Navy. Lieutenant Commander Marguetts was the naval representative on the "Defence Program Working Group" commissioned by the Deputy Minister of National Defence, in November 1963, to develop ways and means of establishing a Defence Programing system suitable to meet the needs of Canada's expanding and complex Department of National Defence.

As information contained in these files has not yet received official sanction and bears security classifications, the scope of this chapter is restricted to a general and brief description of the proposed programing system.

The main objectives of the system are:

(a) To assist top management in the department in decision making by providing the means of analyzing and assessing various military programs and activities in terms which will relate military effectiveness to financial costs, manpower requirements, equipment needs, etc.

(b) To provide the type of data which will enable the effects of defence decisions to be clearly expressed in terms of forces, manpower, equipment, and money both in the short term and over a period of years.

For this purpose, the total Canadian defence structure will be grouped into a number of major programs. These programs will cover all arms of the services and will be expressed in terms of major military missions or objectives. Each program will be analyzed in appropriate detail to reflect the military and civilian manpower, the major equipments and the anticipated costs that are programed over a period of years for the various elements of the Program. Projections of each program will be reviewed annually.

This system will enable Defence Programs to be examined and considered in relation to their overall military effectiveness from the standpoint of achieving a particular mission. It is hoped that the system will enable defence resources to be allocated to Defence Programs in the most effective manner from the point of view of ultimate military output and in accordance with a clear and detailed plan.[1]

Concurrent with the announcement of a Defence Programming System, the Minister proclaimed his intention to integrate Canada's three Armed Forces into a unified force under a single Chief of Defence Staff. Integration at the top-management level was effected July 1, 1964. The Defence Program Working group which was established under the tri-service regime became extinct as its functions have been taken over by the Assistant Chief of Defence Staff (Plans and Programs). As a result, the latest developments since integration cannot be readily determined and the following discussion is limited

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[1]Canada, White Paper on Defence (Ottawa: Queen's Printer, March 1964), p. 20 (by the Honorable Paul Hellyer and Lucien Cardin, Minister and Assistant Minister of National Defence).

to a Defence Programming System as viewed prior to integration. Integration will obviously facilitate implementation as well as strengthen the programing system.

Any comparison or research concerning a Canadian planning/programing/budgeting system must take into account some of the significant dissimilarities in the systems of government. The United States' political machinery is characterized by its Presidential form of government whereby the President, as Chief Executive, is independent of the legislature as to his tenure and to a large extent as to his policies and acts. The President is elected for a fixed term of office, and a distinct separation of powers exists between the Executive and Legislative branches of government.

The Canadian system, on the other hand, is patterned after the British parliamentary form of government whereby the real executive, consisting of the Prime Minister and his Cabinet, coordinates and controls both the executive and hopefully the legislative branches of government. The Canadian system, therefore, requires that the Minister and Cabinet members be collectively responsible for government policy and depend upon continued support of Parliament for their existence.

The United States budget is formulated, prepared, presented, and defended by the Executive Branch of government. Unlike the Canadian system, legislative reduction, postponement, or other changes do not entail the life or death of the government. Agencies and departments modify their programs in accordance with the wishes of Congress and execute the appropriation acts accordingly. In contrast, a Canadian government would face

dissolution and a new election would be held if the Chief Executive was unable to obtain parliamentary support of his programs.

Another significant factor to be considered in comparing the United States and Canadian defence programing systems is one of relative size. Regardless of what comparison is made between these two countries, the enormous size of the United States demands much more complex and formalized methods of operation. The Canadian system, on the other hand, requires less complex and less formal management procedures.

The Present System

The conventional method of programing defence requirements is accomplished by each individual service. Annually, each service prepares its own five-year program, which reflects the commitments and requirements of each. Collectively, these programs are known as the Mark Document," which is submitted to the Chiefs of Staff Committee for review. This document describes, in general terms, the requirements of each service in terms of manpower, major equipment, and money for each year of the five-year period. In effect, it is very similar to the Five Year Force Structure and Financial Plan instituted by the United States Secretary of Defense. Apart from being less elaborate and formal, the "Mark Document" is plagued with serious defects.

Prior to the integration of the Canadian Armed Forces, operational planning was the responsibility of service chiefs. The Chairman of the Chiefs of Staff and the Chiefs of Staff Committee were responsible for coordinating

the military plans of the services. In this respect it is important to note that the Chairman of the Chiefs of Staff did not possess executive authority and merely acted as an advisor to the Minister of National Defence and coordinated the efforts of the Armed Forces toward fulfillment of National Defence objectives. The Royal Commission on Government Organization described the activities of the Chairman, Chiefs of Staff, and his committee's activity as follows:

> The Committee normally meets weekly, and the members collectively consult with the Minister of National Defence at frequent intervals. There is no provision for voting, and no overriding authority is vested in the Chairman. Recommendations and decisions of the Committee must therefore be unanimous; in the event of disagreement, the Chairman reports the conflicting points of view to the Minister, who may then exercise his authority at his discretion.
>
> Thus, the effectiveness of the Chiefs of Staff Committee as an executive authority is, to a large extent, dependent on the personal qualities of its members, each of whom has a virtual power of veto in its deliberation.[1]

This situation no longer exists as one of the most significant factors of integration was the setting up of a single Chief of Defence Staff responsible for both the control and administration of Canada's Armed Forces. This action followed very closely the recommendation of the Commission that:

> 1. Provision be made for the exercise by the Chairman, Chiefs of Staff, of the ministerial power of direction over the Armed Forces, within such limits as the Minister may define.
>
> 2. The Chairman, Chiefs of Staff, be given the "control and administration" of such elements common to two or more services as the Minister may designate.

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[1] Canada, The Royal Commission on Government Organization, Vol. IV (Ottawa: Queen's Printer, January 21, 1963), p. 70. (Vol. 4 is Special Areas of Administration, Sec. 20, Department of National Defence.)

3. In recognition of the change of status implicit in these proposals, the title of the Chairman, Chiefs of Staff, be altered to "Chief of Canadian Defence Staffs."[1]

The Minister of National Defence reviewed the recommendations of the Royal Commission on Government Organization in his "White Paper on Defence" and commented as follows:

> Having stated the problem, the Royal Commission recommended the gradual transfer of executive control of common requirements to the Chairman, Chiefs of Staff. In the opinion of the government, this solution does not adequately resolve the basic issues. If a single command structure is not established, co-ordination by the committee system will remain with all of its inevitable delays and frustrations.[2]

The Minister then announced the intention of the Government to proceed beyond the recommendations of the Commission:

> Following the most careful and thoughtful consideration, the government has decided that there is only one adequate solution. It is the integration of the Armed Forces of Canada under a single Chief of Defence Staff and a single Defence Staff. This will be the first step toward a single unified defence force for Canada. The integrated control of all aspects of planning and operations should not only produce a more effective and co-ordinated defence posture for Canada, but should also result in considerable savings.[3]

Another significant defect of the "Mark Document" is that it never receives official sanction and therefore cannot be used as authority for any action nor as the sole and basic tool for preparing annual estimates. Since it does not receive official sanction, no effort is made to keep the document

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[1] Ibid., p. 74.

[2] Canada, White Paper on Defence, op. cit., p. 18.

[3] Ibid., p. 19.

up to date. Postponement, reduction, and cancellations are not incorporated into the document. A philosophy of trying again next year is frequently practiced, resulting in an unrealistic backlog of projects awaiting a more favorable political climate for resubmission. These plans, therefore, tend to be substantially beyond the level which is likely to be achieved.

Although the document gives the impression of long-term planning, it is prepared from "scratch each year and tends to represent service hopes rather than plans which are feasible in terms of resources that are likely to be available for implementation.

After initial preparation by each of the services, the "Mark Document" is reviewed by the Chiefs of Staff Committee, followed by a review involving the Deputy Minister of National Defence and the Treasury Board staff. The results of these reviews are transmitted to the Minister of National Defence who, in consultation with the Treasury Board, derives the budget ceilings for the next fiscal year. A complete study of the Canadian budgetary process is beyond the scope of this paper. However, it is sufficient to point out that the review process of defence estimates compared with the United States procedures is considerably less formal, does not follow as fixed a pattern, and is not as well documented.

Under the present system, defence plans and programs receive official sanction and become the basis for action only in so far as they are reflected in the approved annual estimates.

A Proposed Programing System

The expanding size, cost, and complexity of Canadian defence requirements demand improved planning and financial management tools. Management philosophy and procedures which were suitable to meet yesterday's needs cannot adequately cope with today's defence problems and those of the future.

Immediately after World War II, defence expenditures began to fall and appeared to be returning to traditional peacetime expenditure levels. However, the crisis in Korea supplemented by Canada's expanding role and commitments on the international scene resulted in a defence effort of increasing magnitude, reversing this downward post-war trend. Defence expenditures which had been reduced to $385 million in 1950 responded quickly to increased defence activity and rose to $1,652 million by 1962. This fact is also evidenced in the increase in manpower over the same period, rising from 47.2 thousand in 1950 to 126.5 thousand in 1962.[1] These statistics may not seem significant when compared to a United States defense budget of approximately $50 billion. However, relatively speaking, the impact of this increase is equal in magnitude to that experienced in the United States.

The $1,652 million spent in 1961-62 by the Department of National Defence (including the Defence Research Board) and for defence purchasing and civil defence represented 25 per cent of total federal expenditures, but defence activities in terms of employment, equipment

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[1] Royal Commission on Government Organization, Vol. IV, op. cit., p. 62.

> and other operating costs accounted for an even larger proportion of federal government operations. Excluding statutory grants, payments to provinces and debt service, the remaining expenditures of the Government of Canada on its own operations in 1961-2 were less than $4,000 million, of which more than 40 per cent is accounted for by defence spending.[1]

In order to meet the challenge of Canada's growing and complex defence effort, the Deputy Minister of National Defence formed the "Defence Program Working Group" to establish a Defence programing system suitable for meeting the current and future needs of the Department of National Defence.

The working group commenced the study in November, 1963, and made considerable progress toward designing a programing system for the Canadian Armed Forces. A study was made of the programing system implemented by United States Secretary of Defense Robert S. McNamara and Assistant Secretary of Defense (Comptroller) Charles J. Hitch.

The proposed Canadian programing system was "cast in the same mold" and outside of deviations necessitated by a different political and organizational environment, it is similar to that implemented in the United States.

At present, the Canadian system does not entail a comprehensive, long-term defence program approved by the Minister of National Defence and developed in such a manner as to provide a useful tool for coordinating the planning and budgetary process. Also significant is the fact that at present it does not provide a systematic procedure for the preparation and review

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[1] Ibid.

of national security policies at a level above the Department of National Defence.

The programing system proposed will provide a systematic statement of military activities, organized into programs and supported by adequate details displaying the planned allocation of funds, manpower, and facilities over a stated period of time. These data will provide the framework within which central and effective decisions can be made concerning financial plans, force structure, allocation of priorities, choice of weapons systems, manpower levels, and other similar matters.

The main objective of the proposed Canadian system is not to provide automatic decision making but to improve the data available to decision makers in order that they may perform their functions with greater rationality. Decisions will be based on significant data which are better organized and more systematically prepared than those used at present.

The essential purpose of the programing system is to provide a useful management aid at the apex of military decision makers. The Minister of National Defence, the Chief of Defence Staff, the Deputy Minister, as well as the individual services, will find the system particularly valuable in assessing new proposals which can conveniently be assessed in relation to one another and to the over-all defence program. Policy makers, planners, and programers will be provided with a common frame of reference within which programs or amendments thereto can be evaluated within the context of the over-all defence programs and according to a uniform and systematic procedure.

Unlike the "Mark Document," the system will provide a useful means of bridging the gap between planning and budgeting. Once implemented, the approved long-term program will form the only authorized basis for the preparation of estimates. Preparation of estimates will become a matter of translating the cost of program elements for the next fiscal year into budgetary appropriation format.

In addition to the advantages above noted, the system will also provide a tangible means of reflecting and evaluating the long-term effects of budgetary reductions or other decisions imposed from above. The implications of such decisions can be readily determined, assessed, and followed through adequately.

The essential feature of this system is that the total defence effort will be expressed in terms of missions to be accomplished. The data accumulated will reflect the details of an approved long-term program. It is anticipated that the program will be approved by the Minister of National Defence in substance and approved by the Government in principle. The above approvals would represent a definite advantage over the United States programing system in that legislative approval would almost certainly follow.

In structuring the Canadian Defence programing system, the Working Group proposed setting the total Canadian Defence objectives in terms of seven major programs. These programs will carry the explicit approval of the Minister of National Defence and serve as approved directives to the Department of National Defence.

Each program will be analyzed into principal components and sub-components, such as operational force requirements, logistic and support forces, mission training, and command and control.

Each component and sub-component in turn will be analyzed into its elements. As in the United States system, elements are defined as the lowest level for which programs system documentation will be maintained. The elements themselves consist of units or groups of units. Program elements are the basic building blocks of the system. It is the elements that will be priced out and for which data will be maintained. Each of these elements is analyzed in terms of forces, equipment, financial estimates, manpower, major equipment, and other resource data.

Collectively the seven major programs will represent the over-all approved military plans expressed in terms of missions to be accomplished in order to achieve national and internal defence objectives. The documentations will describe in detail inputs of forces, equipment, manpower, and expenditures required to support the programs over a five-year period.

It is proposed that documentation of program elements will be maintained in the Deputy Minister of National Defence's office and kept up to date. Service activities will be carried out within the framework of approved programs.

Any effective system must be adaptable to the environment in which it is expected to function. In a large-scale and complex organization such as the Department of National Defence, it is evident that planning, programing,

and budgeting are dynamic management functions. In order to remain viable, such a system must be flexible and provide for possible changes resulting from decisions on policy affecting defence, availability of funds, phasing of procurement programs, manpower levels, and so on. Under the present system, such decisions tend to be made in relation to the current year's estimates. Decisions which affect defence policy, funds, and other resources must be expressed and recorded in terms of their long-term as well as their short-term effects on military activities.

The defence programing system is intended to provide a means of reflecting the long-term effects of decisions, such as budgetary cuts, postponement of procurement, imposition of manpower ceilings, or other similar questions in terms of specific program elements over a specified time period. The objective is that the effects of today's decisions on future activities will be clearly identified and written into the detail of the long-term program. Only by this means can programs be kept on a realistic basis.

Changes to approved programs can also be initiated from the lower echelons of military organization. If a change became necessary during the year, the service concerned would propose it in accordance with an established program change" system. Depending upon the magnitude and significance of the proposed change, necessary approval would be sought in order to include it in the approved program. To prevent all change proposals reaching the very apex of defence management, a system of "thresholds" will be established setting the parameters within which specific authorities

can approve changes.

In addition to a program change procedure, an annual review of the programs will be carried out for the purpose of up-dating the programs to reflect approved changes as well as implementing policy changes resulting from current and anticipated national and international conditions.

Although the programing system described above is feasible and highly desirable, one should not underestimate the difficulties often encountered in implementing concepts in an actual environment.

A Program Budget

Although a 'program budget' is a useful by-product of a programing system, the proposed Canadian defence system will be compatible with the present Canadian Federal budgetary system. The system will function, as it does in the United States, without a program budget.

It is highly possible, however, that changes in the Canadian budgetary process may be adopted in the near future. The Royal Commission on Government Organization has recommended drastic and far-reaching changes in Canadian Government financial management. A project group under the direction of James C. Thompson, Resident Partner, Peat, Marwick, Mitchell and Company (Canada), Ottawa, Ontario, was designated by the Commission to "report on steps that may be taken for the purpose of 'making more effective use of budgeting, accounting and other financial measures as means of achieving more efficient and economical management of departments and

agencies.'"[1]

The group viewed the role of budgeting, accounting, and other financial measures as:

> A means of providing all levels of management with targets or objectives so that performance of each may be measured. They also provide a check on the efficiency with which available resources, material and human, are used . . . the explosive growth in the scale of government expenditure necessitates the adoption of modern and efficient management methods, similar in many respects to those employed by business.[2]

The study group concluded that the present methods of financial management were inadequate to cope with a large-scale, complex, and diverse government activity. The present cash budget in terms of standard objects of expenditures is inadequate for efficient financial management. Although object classification has attractions from a statistical point of view, it has limited value as a means of planning and control. This type of classification also has an adverse effect on the review of estimates by the Treasury Board. The increasing magnitude of government expenditures has resulted in closer scrutiny of estimates; however, the reviews tend to focus on the details of proposed expenditures rather than with the competing needs giving rise to them.

The Commission therefore recommended a program budget for all government activities. Some of the pertinent recommendations made by the

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[1] Canada, The Royal Commission on Government Organization, Vol. I (Ottawa: Queen's Printer, July 18, 1962), p. 94. (Vol. I is Management of the Public Service, Sec. 3, Financial Management.)

[2] Ibid., p. 95.

Commission are listed below:

1. All departments and agencies be required to prepare and submit to the Executive long-term plans of expenditures requirements by programmes.
2. Based thereon, an overall forecast of government expenditures and projected resources for a period of five years be prepared annually.[1]
3. The number of votes be reduced and all cost elements of individual programmes be consolidated within the same vote.
4. Departmental estimates be prepared on the basis of programmes of activity and not by standard objects of expenditure.
5. More objective standards for analysis and comparison be developed and employed by senior departmental management and the Treasury Board in the review process.[2]
6. The form of the Estimates be revised so that the vote will more clearly describe the purposes of expenditures, more comparable and complete supporting information could be provided, and unnecessary detail eliminated.[3]

The above-noted recommendations point to a "program budget." Although it is beyond the scope of this study to predict the adoption of program budgeting in the Federal government, the integration of the Armed Forces under a single Chief, Defence Staff, and the proposed programing system were largely influenced by the recommendations of the Commission. If this eventually becomes a reality, the gap between planning and budgeting will have been bridged, providing a useful and powerful tool for effective management of government activities.

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[1] Ibid., p. 102.

[2] Ibid., p. 100.

[3] Ibid., p. 117.

CHAPTER VI

SUMMARY

Budgeting is primarily concerned with the control and effective allocation of limited resources toward the achievement of an almost inexhaustible range of objectives.

During the affluent developmental stage of the United States, an abundance of resources led to budgetary policies concerned primarily with the control of the purse rather than with the effective use of resources.

As the rising costs of expanding and complex government activities began to exert pressure on financial management policies, budgetary reforms focused attention on the more effective use of resources. After World War II reforms to improve the content and presentation of the Federal budget began to gather momentum. It was during this period that military financial management procedures underwent considerable reform. The National Security Act of 1947, Title IV of the National Security Act Amendments of 1949, the Budget and Accounting Procedures Act of 1950, and the Defense Reorganization Act of 1958 were among the significant legislative landmarks affecting the military.

Implementation of a performance-type budget as recommended by the first Hoover Commission took considerable time to take a firm hold in the Department of Defense. The Hoover Commission indicated what the

objective was, but its accomplishment proved to be a difficult and laborious task. The first attempts at implementing this recommendation were primarily in the form of appropriation title modifications and reclassification. Although these reforms led to the assumption that a performance-type budget had been established, implementation of a more effective performance budget was not realized until after the appointment in 1961 of Robert S. McNamara as Secretary of Defense and Charles J. Hitch as the Assistant Secretary (Comptroller).

Prior to this time, military planning and financial management had been treated as independent activities. Planning fell within the domain of the Joint Chiefs of Staff and was projected well into the future. Budgeting, on the other hand, was performed by the comptrollers whose time horizon was projected on a year-by-year basis." To bridge this gap between planning and budgeting, a programing system was established.

The primary purpose of the system was to integrate these three interrelated but all important phases of the decision-making process. The core of the system was established in the Five Year Force Structure and Financial Plan, which became basically a summary of all approved programs for the Department of Defense and represented the authority for all military activities.

In order to maintain this core in harmony with the changing times, a Program Change Control system was established to provide a controlled, rapid, and effective review and approval of proposed additions, deletions, or modifications.

Together with the related activities of progress reporting, control, evaluation, and cost/effectiveness studies, the new system has resulted in

a significant improvement in the decision-making process.

One significant effect of the system has been a greater concentration of power in the Secretary of Defense, resulting in centralized responsibility for planning and determination of policy, combined with the decentralization of responsibility for execution.

Among the weaknesses of the system has been the arbitrary nature by which some of the elements are classified under programs. In an organization as large and as complex as the United States Department of Defense, it is difficult to devise a simple and neat classification for the entire defense effort into nine primary programs. The statement that program decisions would be budget decisions has sometimes been criticized, and confidence in the system has been weakened when budget decisions at times become program decisions. It is important to note in this respect that the programing system as implemented by Secretary McNamara has been an internal one operating within the confines of the Defense Department. Until Congress accepts the program budget concept, the bridge will continue to bear two-way traffic.

The proposed Canadian programing system is cast from the same mold as that used in the United States and other than deviations necessitated by the the differences in political and organizational environment, it is similar to the one being used in the Pentagon. It is anticipated that under a parliamentary system, defence programs will receive approval in principle by the government. This would represent a significant advantage and could possibly lead to a program budget. Recommendations of the Royal Commission on

Government Organization point toward this possibility.

Management philosophy and procedures which met yesterday's needs cannot adequately cope with the defense problems of today and the future. The programing system implemented by Secretary of Defense McNamara and the proposed Canadian system represent significant steps in the right direction.

APPENDIX

GLOSSARY OF BASIC TERMS*

This glossary is intended to introduce the reader of this thesis to the basic terminology commonly used in the United States integrated system of planning, programing, and budgeting.

Appraisal	Impartial analysis of information, at each responsible management and control level, from which the effectiveness and efficiency of the total process can be measured (operators self-appraisal, independent appraisal, overall program appraisal).
Appropriation Sponsor	The individual designated as responsible for justifying the need for the procurement of funds for an appropriation within its budget process.
Approved Programs	The individual program elements or other components of the Five Year Force Structure and Financial Plan approved by the Secretary of Defense and as modified by the Secretary of Defense by approved Program Change Proposals.
Budget	A planned program for a fiscal period in terms of (a) estimated costs, obligations, and expenditures, (b) source of funds for financing, including reimbursements anticipated, and other resources to be applied, and (c) explanatory and workload data on the projected programs and activities.

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* - Source: Adapted from Department of the Navy, Office of the Chief of Naval Operations, The Navy Programming Manual: Part I, Programming Overview (OPNAV 90P-1, Sept. 1964), pp. I-6-1 to I-6-8.

Capability	The ability to execute a special course of action.
Construction Annex	A listing of major military construction projects which provides by fiscal year the cost and location for each approved construction line item which exceeds $1 million.
Cost Effectiveness Analysis	A method for examining alternative means of accomplishing desired military missions for the purpose of selecting weapons and forces which will provide the greatest military effectiveness for the cost.
Execution	The operation of carrying out a program as contained in the approved budget (program execution).
Five-Year Force Structure and Financial Plan	The summation of the approved programs of the Department of Defense components (see Approved Programs).
Information System	The network of all communication methods within an organization. It includes information exchanged upward, downward, or laterally to accomplish the objectives of the organization as well as information fed back to be used in management appraisal, progressing, controlling, scheduling, planning, and also in replanning, rescheduling, and other phases, to assure the appropriate end result.
Investment Costs	Those program costs required beyond the development phase to introduce into operational use a new capability, to procure initial, additional or replacement requipment for operational forces or to provide for major modifications of an existing capability. They include procurement appropriation costs, except those associated with the operating category, and all military construction appropriation costs except those associated with research and development. They exclude RDT & E, Military Personnel, and Operation and Maintenance appropriation costs.

Material Annex	A listing of on-hand or procurement line items, selected by the Office of the Secretary of Defense because of their size or importance, with descriptive information, cost data, production and delivery schedule, and inventory data.
Memorandum Non-Add Program Element	A portion of a program element or aggregation separately displayed for information purposes.
Mission	The assigned functions, task, roles, and purposes of an organization. The objective; the task together with the purpose, which clearly indicates the action to be taken and the reasons therefor.
Objective	A goal, expressed as that portion of the "what," "when," and "where" of a requirement which is reasonably feasible of attainment within the expected availability of the resources of men, money, and technological capability (force objective, program objective).
Operating Costs	Those program costs necessary to operate and maintain the capability. These costs include Military Personnel, Operation and Maintenance and recurring Procurement appropriation costs (such as replenishment spares). They exclude RDT & E and Military Construction appropriation costs.
Plan	The required actions or capabilities needed to accomplish a mission (operational plan, logistics plan, general plan).
Program	(1) A plan or scheme of action designed for the accomplishment of a definite objective which is specific as to the time-phasing of the work to be done and the means proposed for its accomplishment, particularly in quantitative terms, with respect to manpower, materiel, and facilities requirements. Thus, a program provides a basis for budgeting; (2) a segment or element of a complete plan; (3) a budget account classification.

Programs (Programing System)	A combination of program elements designed for the accomplishment of a definite objective or plan which is specific as to the time phasing of what is to be done and the means proposed for its accomplishment. The major components of the DOD Programing System are the numbered programs in the FYFS & FP.
Program Annexes	Detailed listings or specific resource requirements of the five-year programs.
Program Change Proposals	Proposals for changes to the Approved Program or component thereof.
Program Cost	The estimate of Total Obligational Authority required.
Program Cost Categories	Consists of Research and Development, Investment, and Operating Costs.
Program Element	An integrated activity; an identifiable military capability; a force, support activity, etc., comprising a combination of men, equipment, and facilities.
Program Element Sponsor	The individual who has the responsibility for coordinating the development of proposed program changes to the program elements in the DOD Programing System.
Program Sponsor	The individual designated as responsible for determining program objectives, time-phasing, and support requirements, and for appraising progress, readiness and military worth of programs.
Programing	The process of establishing and maintaining a program.
Project	A planned undertaking of something to be accomplished, produced, or constructed, having a finite beginning and a finite ending. For example, a "construction project" or a "research and development project."

Project Sponsor	The individual designated by a program sponsor from within his organization who assists the program sponsor in formulation and administration of a program, monitors the execution of a project for the program sponsor, and transmits guidance from the program sponsor to the producer organization as required.
Report	Any transmission (presentation) of data or information, on a one-time, recurring, regular, periodic, or as required basis, whether in oral or written narrative, tabular, graphic, questionnaire, punched-card, tape, or other form, regardless of method of preparation or transmission.
Reporting System	The flow of information, including the procedures and methods for preparing, transmitting, and using, which serves an integrated information system, a management information system, or a portion of a system or other operation.
Requirement	(1) The need or demand for personnel, equipment, facilities, other resources, or services, by specific quantitatives for specific periods of time or at a specified time. (2) For use in budgeting, item requirements should be screened as to individual priority and approved in the light of total available budget resources. (The "what," the "when," and the "where" considered necessary to carry out a plan in order to accomplish a mission, such as force requirement, materiel requirement.)
System	An assembly of procedures, processes, methods, routines, or techniques united by some form of regulated interaction to form an organized whole.
Thresholds	A set of criteria which, if met or exceeded, requires the submission of a program change proposal to the Office of the Secretary of Defense.
Total Obligational Authority	The total financial requirements for the Five Year Force Structure and Financial Plan, or any component thereof.

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